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Panjolo
Bemon
Malinta
Saluy
Bibao
Capic
Novaliches
Gu nayan
S.Mateo
Ampas ó Ampit
R. Ampit
S. Bartolome
Bagbag
Talinapa
Cahalohan
R. Tuliahan
Nanca
R. Nanca
M. Baluabalua
Bosoboso
S. José
Santanden
Pico Susundulaga
M. Canumay
R. Lanati
Tinajeros
S. José de Navotas
Tambobong
Malabon
Caloocan
Balintaoag
Tenejayo
A. Banza
Barta
Bayan Bayahan
Lag. de Lamon
A. Cotcot
M. Maculis
R. Paingain
Masambon
S. Francisco del Monte
Balaras
Mariquina
Binitag
R. Arombol
Sta Ines
360m
M. Batacbac
M. Tayabasan
M. Batag
M. Lamato
M. Limutan
M. Orion
M. Sare or Tapasi
Iron
Camarglao
Pico Pitong Pitong
R. Matulis
A. Calaba
Mayap
R. de Tayabasan

XIIM

atulis

Sitio Bambanan

A. Tamala

M. Sare or Tapasi

M. Orion

M. Tayabasan

M. Limutan

R. Ages

BINANGONAN
de Lampon

M. Lamató

Iron

R. Arombol

Sta Iñes

pta Inaguican

de Tayabasan

360m

Hacienda de S. Isidro

Sitio Manti

pta Tactigan

S. José

M. Canumay

R. Lanati

pta Real de Lampon

Sitio Pacapalsan

Pico Susundulaga

S. José

Santanden

R. Talagain

R. Tinuan

Binitag

M. Mapalug

Lag. de Lampon

M. Palis

Hamasanan

Pto de Subig
Ens. de Binaga
Pta Alanin
Sitio Mabago
Sitio Pansol
Sitio Ocon
A. Cairacan
Morong
R. Mainaua
Sitio Bayaolate
A. Mauban
A. Limaraning
M. Sooc
A. Tanaua
M. Butilao or Natib
M. Tauaua
M. Malicaban
1334m
M. Baing ila
Sitio Cayocos
M. Cantoan
Cerro Falocboc
A. Cabayo
R. Limalan
Sitio Nabaco
Sitio Tayas
A. Camaling
A. Logo
600m
M. Samat
Bagac
A. Salamang
Pta Saisain
Pico Patingan
Sierra de Marivele
1387m
P. Bintana
P. Caycaytano 1487m
P. Nagouliat 1426m
A. Liling
A. Paisanhuan
Pta Caibaba
Pta de Cañas
A. Oglatum
Pta Luzon
Pta Guoy
A. Bigaan
Sitio Nanca
Sitio Sucuban
Cabcabe
Pta Cabcabe
Pta Real
Pta de S. Jose
Pta Lasisi
Mariveles
Pto Mariveles
Pta Hornos
Pulo Monet
Los Cochinos
I. DEL CORREGIDOR
S. José
Monja
Abucay
Capitangan
R. Hugun
Tuyo
BALANGA
R. Abocbo
R. Talisay
Pilar
R. Calamasang
Sto Domingo
Orion
A. Catmon
A. Babarcatin
R. Pandan
Pta Pandan
Morro de Orion
R. Mamalag
Limay
Pta Linas
Pta Lim

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE
MILITARY INFORMATION DIVISION

THEATRE OF

XIIM

M. Sooc
A. Tanaua
M. Butilao or Natib
M. Tauaua
M. Malicaban
1334m
M. Baing ila
Sitio Cayocos
M. Cantoan
Cerro Falocboc
A. Limaran
A. Cabayo
R. Limatan
Sitio Nabaco
Sitio Tayas
A. Camaling
A. Logo
600m
M. Samat
Bagac
A. Salamang
Pta Saisain
Pico Patingan
Marivele
A. Liting
A. Paisanhuan
Sierra de
1387m
P. Bintana
P. Caycaytano 1487m
Sitio Macayo
P. Nagouliat 1426m
Pta Caibaba
Pta de Cañas
A. Oglatum
A. Bigaan
Pta Luzon
Pta Guoy
Sitio Sucuban
Sitio Nanca
Cabcabe
Pta Limay
Pta Cabcabe
Pta Real
Pta de S. Jose
Pta Lasisi
Mariveles
Pto Mariveles
Pta Hornos
Pulo Monet
Los Cochinos
I. DEL CORREGIDOR
S. José
Pta Buri
Monja
Pulo Caballo
El Fraile
Abucay
Capitangan
R. Hugun
Tuyo
BALANGA
R. Abocabo
R. Talisay
Pilar
R. Calamasang
Sta Domingo
Orion
A. Catmon
A. Babancatin
R. Pandan
Pta Pandan
Morro de Orion
R. Mamalag
Limay
Pta Linas
R. Nabaca
R. Nabaca
R. Mac
R. La

MANILA BAY

NERAL'S OFFICE
DIVISION
OF

S. Roque
Caridad
Dakalican
CAVITE
Cavite viejo
Putol
Noveleta
Baltaloc
Licton
Dos bocas
Alapan
Rosario
Viuas
Viuas
Sta Cruz
S. Francisco
Pasogrande
Santol
R. Imus
R. Ilang Ilang
Santiago
Amaga
R. Amaga
R. Imus
R. Ylang Ylang
R. Obispo
R. Camachile
Calibayo
Molino
Timaban
R. Melan

M A N I L A

B A Y

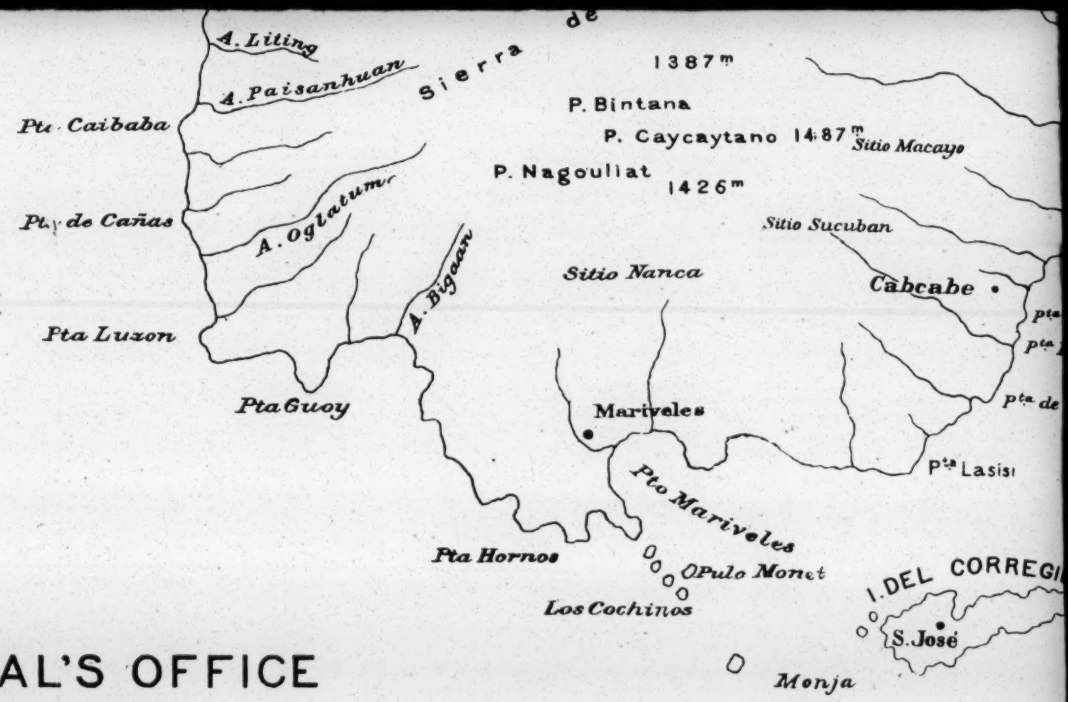
L A G U N A

MANILA

R. Naba
R. Naba
R. Mac
R. La
Malaca
Malajacan
Meycauayan
Hoisa
Malanday
Polo
Mabol
Obando
Pasolo
Panjolo
Bemon
Malinta
Tinajeros
S. Jose de Navotas
Tensuyo
Tambobong
Malabon
Caloocan
Barras de Vilas
Tondo
Binondo
Sampaloc
Quiapo
S. Miguel
La Hermita
Malate
Ermita
Pineda
(Pasay)
Malibay
Parañaque
Las Piñas
Bacoor
Panapaan
Banats
Cavite viejo
Binacayan
Putol
Noveleta
Baltaloc
Victoria
Dos bocas
Rosario
Viuas
Sta Cruz
S. Francisco
Paso grande
Santol
Amaya
Calibajo
Timaban
El Fraile
Pta Lamao
Limay
Pta Buri
Pulo Caballo
Caridad
Dakalican
S. Roque
CAVITE
A. Saguing
Saluy
Bibao
Capic
Novaliches
S. Bartolome
Bagbag
Talinapa
Cahalohan
Banta
R. Tuliahan
A. Bagong
Balintaoag
Masambon
S. Francisco del Monte
Sta Rosa
Cruz na ligas
Cubao
Pumping Station
Santolan
Aqueduct
Hermitaño
Reservoir
S. Juan del Monte
Pandacan
S. Felipe Neri (Mandaluyan)
S. Fernando de Dilao (Paco)
Sta Ana
Pedrillo
Singalon
R. Pasig
Guadalupe
S. Pedro Macati
Culiculi
S. Nicolas
Namancat
Pateros
Tipas
Ususan
Taguig
Banibani
Tambay
Hagonoy
Bicutan
Mabong
Tambo
Imus
Tancantuma
Lumbayan
Bucandala
Anabo
Malyasan
Salitran
Saban
Molino
Santiago
Palico
Baltoc
Ligas
S. Nicolas
R. Zapote
Munting-tupa
Tunasantillo
S. Pedro Tunasan
S. Antonio
S. Isidro
Salitran
Biñang
Salampaso
Cabuang bayabay
Carmona
Llantic
Tumbao
Palimparan
Sta Rosa
Calabozo
Lauguiba
Tagapo
Sald
Bagumbayan
A. Manting
M. Mani
Sucat
A. Buri
Pamplona
Gupang
Lagaslas
A. Alabang
Alabang
Bayarga
A. Madali
A. Polotang
Ambang
Mambo
Alina
Mabalo
Salinas
Alapan
Viuas
Amaya
R. Amaya
R. Pasig-Pasig
R. Obispo
R. Imus
R. Pasig
R. Ilang Ilang
R. Canonchile
R. Linan (Canas)
R. Malan
R. Tibagan
R. de Bacoor
Cavite
Ternate
Pta Lamao
Limay
Pta Buri
Pulo Caballo
El Fraile
Timaban
Cueva de Pamitinan
M. C
M. Tunca
A. Saluebuc
Burgos
M. Duyo
Gu nayan
S. Mateo
Ampas ó Ampit
R. Ampit
M. Baluabalua
Nanca
R. Nanca
Bayan Bayanan
M. Maculis
Lag. de Lamon
A. Cotcot
Mariquina
Balaras
M. Macabubuno
M. Matugalo
Ugun
Arayan
Antipolo
Calunahin
Tibagan
Caiinta
Rosario
Magbanga
Sagad
Taytay
Patanas
Pinguiang
Numarap
Barra de Napindan
Angono
Canteras
Duyap
Bilibiran
Darangan
S. Juan
Binangonan
Cardona
Calvario
Paso de Diablo
Limbolimbon
Itagan
Pipino
Pulo Insan
Pta Tupac
Quina
I. Talim
Subo
Pico
Susur
Mala
Ano

Malacca
Malajacan
Meycauayan
Hoisa
Malanday
Polo
Mahol
Obando
Pasolo
Panjolo
Bemon
Malinta
Tinajeros
S. Jose de Navotas
Tambobong
Malabon
Caloocan
Balintaoag
Masambon
Barras de Vitas
Ste Rosa
Tondo
Binondo
Sampaloc
Quiapo
S. Miguel
MANILA
Pandacan
La Hermita
Ste Ana
Singalon
Malate
S. Pedro Macati
Culiculi
Pineda
(Pasay)
Malibay
Mabong
Tambo
Parañaque
Las Piñas
Bacoor
Panapaan
Banals
Talaba
Alima
Mabalo
Salinas
Imus
Tancantuma
Anabo
Salitran
Saban
Pamplona
Lagaslas
Ambang
Mambo
Palico
Baltoc
Ligas
S. Nicolas
Munting-tupa
Tunasantillo
S. Pedro Tunasan
S. Antonio
S. Isidro
Salampaso
Cabitang baibay
Carmona
Llantic
Biñang
Tagapo
Calaboso
Lauguisa
Sta R
Sald
Ususan
Taguig
Banibani
Tambay
Hagonoy
Bicutan
Pateros
Namancal
Tipas
Pasig
S. Joaquin
S. Nicolas
Guadalupe
Bagumbayan
A. Manting
M. Mani
Sucat
A. Buri
Cupang
A. Alabang
Alabang
A. Madali
A. Polotang
Novaliches
Saluy
Bibao
Capic
S. Bartolome
Bagbag
Talinapa
Cahalohan
Barita
Balara
Cruz na ligas
Cubao
Aqueduct
Hermitaño Reservoir
S. Juan del Monte
Ugun
Rosario
Magbanga
Sagad
Bagerilog
Pedrillo
Ste Ana
R. Pasig
S. Felipe Neri (Mandaloyan)
S. Francisco del Monte
Pumping Station
Santolan
Mariquina
Lag. de Lamon
Bayan Banahan
Nanca
R. Nanca
S. Mateo
Ampas ó Ampit
R. Ampit
Gu nayan
Burgos
A. Sulucbuc
M. C
M. Tunca
A. Sampaloc
A. Saguing
Cueva de Pamitinan
M. Duyo
M. Baluabalua
M. Maculis
M. Macabubuno
M. Matugalo
Antipolo
Calunahin
Tibagan
Pinguiang
Numarap
Patanas
Taytay
Caiuta
Barra de Napindan
Angono
Canteras
Bilibiran
Darangan
S. Juan
Binangonan
Cardona
Calvario
Paso de Diablo
Limbolimbon
Itagan
Pipindo
Quinabulasan
Pta Cauit
Pulo Insan
Pta Tupac
Malatumbaga
Subag
Quinagatang
I. Talim
Anosa
465m
Pico Susundalaga
Malacabang
Banla
Tabong
Pulo Banga
Naglumbang
MORONG
Baras
Tanay
Pililla
Teresa
(Sta Rosa)
Hacienda de S. Isidro
S. José
Bosoboso
Pico Susundulaga
S. José
Santanden
R. Putagain
Quisao
Niueningan
Alto de Jalajala
A. Pinang
Jalajala
Pico Cebollas
A. Baquinhon
M. Canumay
R. Lanati
Sitio Manti
Sitio Pac
R. Tinuan
Binitag
M. Mapalug
Lag. de Lampon
Hamasanan
M. Palis
Iron
Coal
Bagumbayan
M. Matualigui
Ilay
R. Sumbatoc
Sta Maria de Caboan
Cartadilla
M. Quisalacot
M. Balugan
Buducal
Masamban
Tayagan
Zambrana
Mabitag
Siniloan
Matiquio
M. Pusao
Pañgil
Pta Inos or Macahong tubig
M. Placio
Paquil
M Pingas
Paete
Putol
Loñgos
Pinagrealan
M. Calvario
Iruyan
LAGUNA

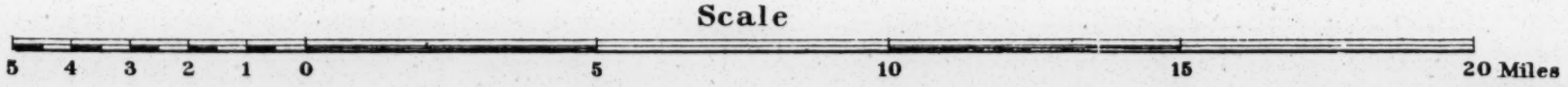
nda de S. Isidro
S. José
Sitio Manti
M. Canumay
R. Lanali
Pico Susundulaga
S. José
Santanden
Sitio Pacapaloan
Pta Tactigan
Pta Real de Lampon
R. Tinuan
Binitag
M. Mapalug
Lag. de Lampon
M. Palis
Hamasanan
R. Majabansalang
Iron
Coal
Bagumbayan
M. Matualigui
Ilay
R. Silambatoc
Baras
Tanay
Sta Maria de Caboan
Cartadilla
Pililla
M. Quisalacot
Masamban
Tayagan
Zambrana
Mabitag
M. Balugan
Bulucal
Niueningan
Siniloan
R. Quinagabiyan
Quisao
Matiquio
M. Pusao
Pañgil
Pta Inos or Mavahong tubig
M. Placio
Alto de Jalajala
Paquil
Batendalit
M. Pingas
M. Camagen
M. Gulubat-babuy
M. Huatog
R. Quinabihan
A. Pinang
A. Baguinbon
Paete
S. Antonio
Putol
Pta Piapi
Jalajala
Pico Cebollas
Loñgos
Tansa
M. Salay
R. Dahilan
R. Nangeibe
Naglumbang
Pinagrealan
M. Calvario
Pulo Banga
I. Calbalete

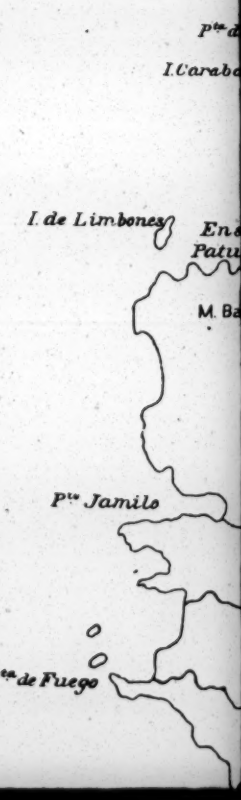


WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE
MILITARY INFORMATION DIVISION

THEATRE OF MILITARY OPERATIONS IN LUZON

1899





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PERATIONS

ON

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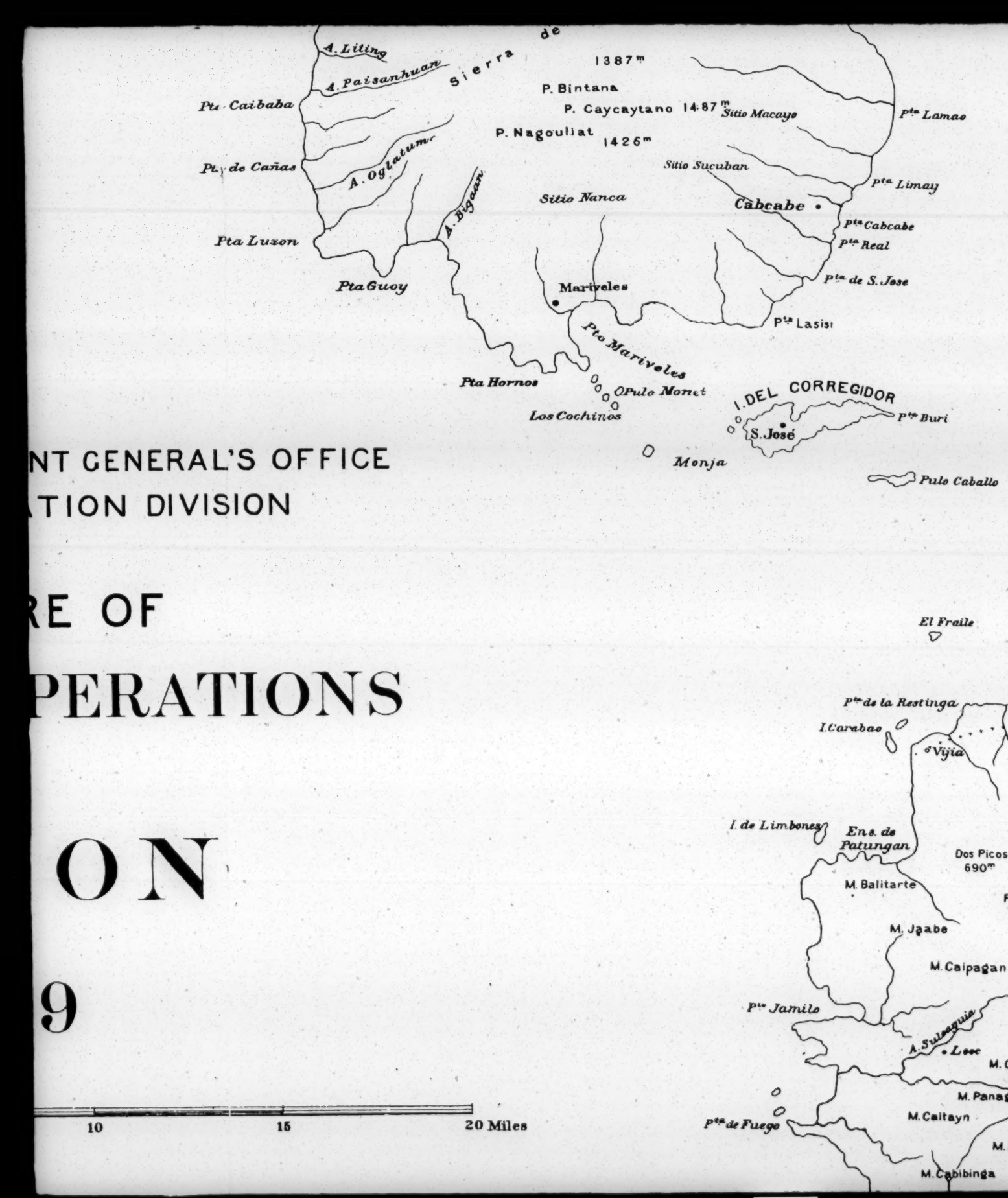
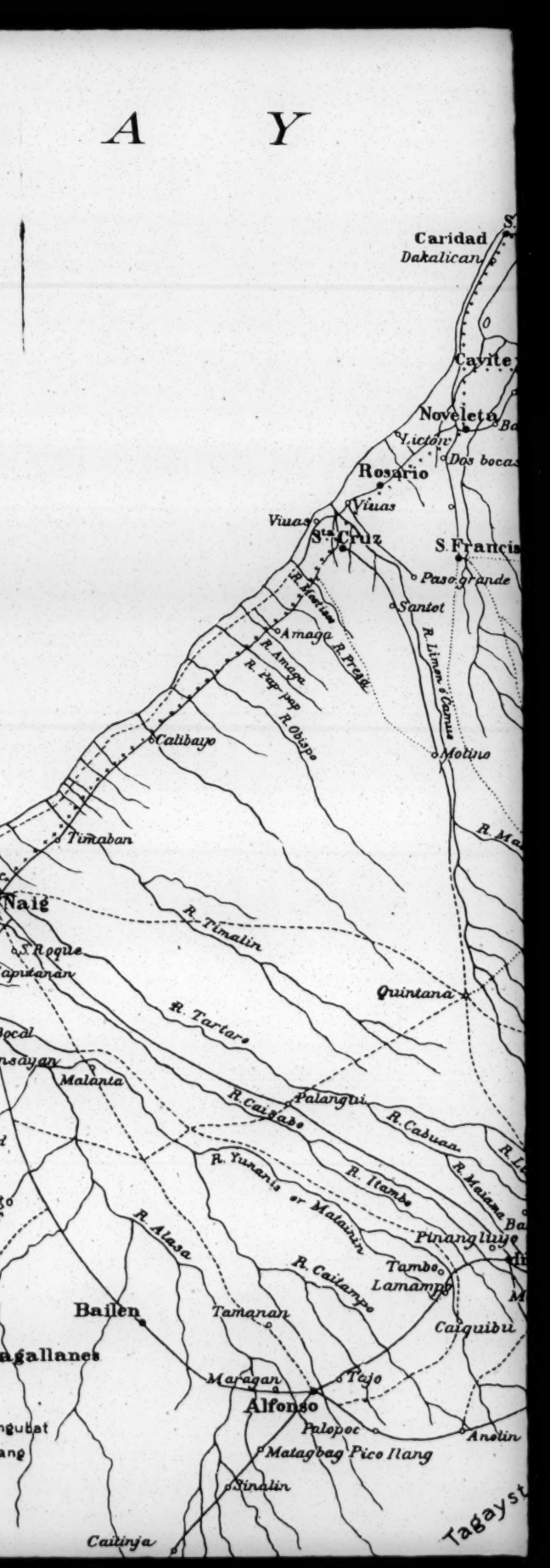




10 15 20 Miles

XIIM

BAY

LAGUNA

Pta Lamao
Pta Limay
Pta Cabcabe
Pta Real
Pta de S. Jose
Pta Lasisi
CORREGIDOR
Pta Buri
Pulo Caballo
El Fraile
Pta de la Restinga
I. Carabao
Vija
Ens. de Patungan
Dos Picos 690m
M. Balitarte
Pico de Loro or Pinagesan
M. Jaabe
M. Caipagan
M. Nagban
M. Tongod
M. Pinagsagan
M. Caycasinto
M. Panaguan
M. Caitayn
M. Malangtubig
M. Pingtangubat
M. Caitalang
582m
Paquito 640m
Dos bocas
Viñas
Amaga
Calibayo
Timaban
Tubac
Naic
S. Juan
S. Roque
Capitanan
Ternate
Maragondon
Bocal
Pinansayan
Malanta
Palungan or Merced
Butin
Bailen
Magallanes
Loec
A. Sulanguia
Caridad
Dakalican
S. Roque
CAVITE
Cavite viejo
Putol
Noveleta
Baltaloc
Rosario
Viñas
Sta Cruz
S. Francisco
Paso grande
Santol
Molino
Tamaran
Tejo
Maragan
Alfonso
Palopot
Matagbag
Sinalin
Anolin
Pico Ilang
Mendez Nuñez
Caiquibu
Amadeo
Tambo
Lamampa
Pinanglluyo
Indang
Buna
Malabar-cajoy
Tancantuma
Lumabayan
Bucardala
Santiago
Anabo
Malvasan
Salitran
Saban
Buenavista
Perezdasmarinas
Quintana
Sampaloc
Alapan
Alima
Mabalo
Salinas
Ligtong
Palico
Baltoc
Ligas
S. Nicolas
Mambo
Ambang
Panguil
Banaod
Alalot
Limbon
Mabatang
Jalan
Banay-banay
Balete
Litil
Caloot
Silang
Balabac
Patingcajay
Pajalan
Bacoor
Panapaan
Banalo
Binacayan
Talaba
Las Piñas
Bagumbayan
M. Mani
Sucat
Pamplona
Lagaslas
Gupang
A. Buri
A. Alabang
Alabang
Bayarda
A. Madali
A. Polotang
Munting-lupa
Tunasantillo
S. Pedro Tunasan
S. Antonio
S. Isidro
Salampaso
Cabitang baybay
Carmona
Llantic
Tumbao
Palimparan
Sta Rosa
Lauguiba
Calabozo
Mampalasan
Loma
Macabling
Cabuyao
Pula
Sta Cruz
Magiiyon
Caon
Corral na bato
Culon
Ningay
Baynbay
Banlic
Mamaling
Meyapa
Siranlupa
Pico Gonzalez 764m
Suplan
M. Sungay
Talisay
Caleocan
Batas
Bongo
Aya
S. Juan
Sta Anastasia
Bigaa
Binang
Tagapo
Malibay
Pineda (Pasay)
Parañaque
Culiculi
Namahcat
S. Joaquin
Pateros
Tipas
Ususan
Taguig
Banlican
Tambac
Hagonoy
Mabong Tambo
Bicutan
Barra de Napindan
Angono
A. Manting
Pasong Tamo
R. Zapote
R. Tiloyan
R. Malangulan
R. Tartaro
R. Caisasa
R. Casuan
R. Malaina
R. Libuan
R. Itambo
R. Yunanis or Malaunin
R. Alaasa
R. Caitanga
R. Timalin
R. Pahayahaya
R. Jalan
R. Grande
R. Matang-ilog
R. Basaal
R. Tibay
R. Mabua
R. de Tanauan
R. de S. Juan
R. Mauganit
R. Amaga
R. Prieto
R. Limon o Camus
R. Llang llang
R. Canonchile
R. de Bacoor
R. Obispo
R. Pag-pag
Pico Gonzalez 764m
M. Maqu 1135
XIIM

La Hermita
Malate
S.ta Ana
Pedrillo
R. Pasig
Singalon
Bagerilog
Magbanga
Sagad
Guadalupe
S. Nicolas
S. Pedro Macati
Culiculi
Pasig
S. Joaquin
Namancat
Pateros
Tipas
Pineda
(Pasay)
Malibay
Ususan
Taguig
Baniban
Tambo
Hagonoy
Mabong
Tambo
Biculan
Parañaque
A. Manting
Bagumbayan
Las Piñas
M. Mani
Bacoor
Panapaan
Talaba
Banals
Sucat
A. Buri
Binacayan
Pamplona
Cupang
Alima
Mabalo
Salinas
Lagaslas
A. Alabang
Ambang
Alabang
A. Pamondiablo
Mambo
Bayarda
A. Madali
A. Polotang
Palico
Baltoc
Ligas
Munting-lupa
Imus
S. Nicolas
Tancantuma
Tunasan Viejo
Lumbayan
Bucandala
S. Pedro Tunasan
Anabo
S. Antonio
S. Isidro
Malyasan
Said
Biñang
Salitran
Salampaso
Tagapo
Cabulang baybay
Carmona
Calaboso
Llantic
Lauguibo
Santa Rosa
Saban
Palimparan
Tumbao
Mampalasan
Perezdasmarinas
Loma
Macabling
Sampaloc
Pula
Santa Cruz
Cabuyao
Maguyon
Culon
Corral na bato
Caon
Ningas
Silang
Litil
Calibot
Mabatang
Balete
Jalan
Banay-banay
Bayubay
Puton
Mamaling
Banlic
Patingcajay
Diezmo
Pajalan
Balabac
Amadeo
Nuñez
Pico Gonzalez
764m
Suplan
Siranlupa
Bigaa
M. Maquiling
1135m
Taytay
Patanas
Pinguiang
Numarap
Barra de Napindan
Angono
Canteras
Bilibiran
Darangan
S. Juan
Binangonan
Cardona
Calvario
Paso de Diablo
Limbolimbon
Itagan
Pipindo
Quinabulasan
Pta Cauit
Pulo Insan
Pta Tupac
Malatumbaga
Subag
Quinagatang
Anosa
465m
Pico Susundalaga
Malacabang
Banla
Tabong
Naglumbang
Pulo Banga
Pulo Malagi
Pta Talim
I. Talim
Teresa
(Sta Rosa)
Duyap
MORONG
Baras
Tanay
Pililla
Quisao
Niueringan
Alto de Jalajala
Pta Jalajala
Jalajala
Pico Cebollas
A. Pinang
A. Baquinbon
Pulo Calamba
Pulo Bay
Calamba
Pta Matilimbas
Pta Mayondon
Lechero
Los Baños
Bay
Tila
Poppoy
S. Antonio
S. Nicolas
Calauang
Bancabanca
Masapan or Bumihan
Dayap
Sulang-lupa
Palayan
Hamasanan
Iron
Coal
Bagumbayan
M. Matualigui
Ilay
Sta Maria de Caboan
R. Silambatoc
Cartadilla
M. Quisalacot
Masamban
Tayagan
Zambrana
Mabitag
M. Balugan
Siniloan
Matiquio
Pañgil
Pta Inos or Masahong tubig
Paquil
M. Placio
M. Pingas
Paete
Putol
Loñgos
M. Calvario
Lumbang
Sta CRUZ
M. S. Isidro or Salasad
Pagsanjan
Tibatib
Pinagsibuitan
Cables
Sambat
Cabanbanang
Calit
Labuin
Sta Clara
Pila
Butog
A. Salaza
Cerro Mabag
Cavinti
M. Layasin
Calibatan
Santiago
R. Bo'o
Sta Niño
Bajanginan
Magdalena
Tipicuan
M. Matagion
M. Habang
Cascade
M. Dumungao
Luisia
S. Isidro
Sula
Ilibilia
Balayan
R. Botocan
Lagu
Zaa
Bay
de

Binitag
M. Mapalug
Lag. de Lampon
Hamasanan
M. Palis
R. Majabansalang
Iron
Bagumbayan
Coal
M. Matualigui
Ilay
R. Sibambatoc
Baras
RONG
Tanay
Sta Maria de Caboan
Cartadilla
M. Quisalacot
Pililla
Masamban
Tayagan
Zambrana
Mabitag
Niueningan
M. Balugan
Bulucal
Siniloan
R. Quinagabijcn
Quisao
Matiquio
M. Pusao
Pañgil
Malatumbaga
Pta Inos or Masahong tubig
Alto de Jalajala
M. Placio
Paquil
Batondalit
M. Camagen
M. Gulubat-babuy
M. Huatog
M Pingas
A. Pinang
A. Paguinahan
Paete
S. Antonio
Putol
Jalajala
Pico Cebollas
Loñgos
Tansa
Pta Piapi
465m
Naglumbang
M. Salay
R. Dahilan
R. Nangaibe
Pinagrealan
M. Calvario
I. Calbalete
Pulo Banga
Pulo Malagi
R. Caliraya or
Lumbang
Pta Talim
Pta Jalajala
Sta CRUZ
M.S. Isidro or Salasad
Tibatib
R. Lamot
Pagsanjan
Pinagsanjan
Cabos
Sambat
Sitio Agonopol
Cerro Mabaguindi
Cavinti
Cabanbanang
Calit
Labuin
Bitog
Nagdapio Cascade
Pta Saley
Sta Clara
Santiago
Pila
A. Salaza
R. Bapesan or Balanacaro
M. Layasin
Calibatan
Pulo Bay
R. Alipit
R. Bo'o
Prigao
M. Soledad
Sta Niño
Magdalena
Bajanginan
Pta Matasas
Pta Mayondon
M. Matagion
B A Y
E
XIIM

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE
MILITARY INFORMATION DIVISION

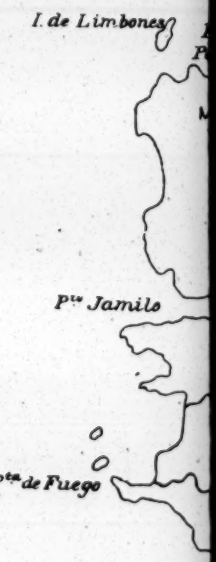
THEATRE OF
MILITARY OPERATIONS
IN
LUZON

1899

Scale

5 4 3 2 1 0 5 10 15 20 Miles

DRAWN BY C.H. OURAND AND D.H. BLAKELOCK.



ENERAL'S OFFICE
N DIVISION

OF

RATIONS

N

Pta Hornos
Los Cochinos
Pulo Monet
I. DEL CORREGIDOR
S. José
Pte Buri
Monja
Pulo Caballo
El Fraile
Pte de la Restinga
I. Carabao
Vija
I. de Limbones
Ens. de Patungan
Dos Picos 690m
M. Balitarte
M. Jaabe
M. Caipagan
Pte Jamilo
M. Tongod
M. Pinagsagan
A. Sulaguia
Looc
M. Caycasinto
M. Panaguan
M. Caitayn
Pte de Fuego
M. Malangtubig
M. Cabibinga
Nasugbú
Ternate
Maragondon
582m
Pico de Loro or Pinagesan
Palungan or Merced
Paquito 640m
Butin
M. Nagban
R. Amaya
M. Talin
Naic
S. Juan
S. Roque
Capitanan
Timaban
Lubac
Bocal
Pinansayan
Malanta
Caitinja
M. Cairilan 650m
M. Apayan
R. Polo
A. Nayoibat
Bailen
Magallanes
M. Pingtangubat
M. Caitalang
Tamanan
Maragan
Alfonso
Tajo
Palopoc
Matagbag
Pico Ilang
Sinalin
Corda de Tagaytay
Rosario
Viuas
Sta Cruz
S. Francisco
Alapan
Paso grande
Santol
Amaya
R. Pretil
R. Obispo
Calibayo
Molino
Santiago
R. Malangualan
Buenavi
R. Timalin
Quintana
R. Tartaro
R. Castaño
Palangui
R. Cabuaa
R. Libuan
R. Maisac
R. Yuranis or Matanin
R. Itamba
R. Alasa
Banaod
Pinangluyo
Indang
Tambo
Lamampo
R. Caitampo
Majaban-cajoi
Caiquibu
Mendez
Anolin
Bayuguinga
R. Amaya
Caitinja

15 20 Miles

THE NORRIS PETERS

XUM

Cavite viejo
Binacayan
Putol
Noveleta
Baltaloc
Dos bocas
Rosario
Viuas
Sta Cruz
S. Francisco
Paso grande
Santol
Amaga
Calibayo
Molino
Imus
Tancantuma
Lumabayan
Bucandala
Anabo
Mal-yasan
Salitran
Saban
Perezdasmarinas
Sampaloc
Quintana
Buenavista
Alima
Mabalo
Salinas
Alapan
Palico
Baltoc
S. Nicolas
Ambang
Mambo
Pamplona
Gupang
Lagaslas
A. Buri
A. Alabang
Alabang
Bayaran
A. Madali
A. Polstang
Munting-lupa
Tunasantillo
S. Pedro Tunasan
S. Antonio
S. Isidro
Biñang
Salampaso
Tagapo
Cabilang baybay
Carmona
Llantic
Tumbao
Calabozo
Lauguibo
Sta Rosa
Mampalasan
Loma
Macabling
Pula
Sta Cruz
Cabuyao
Magiyon
Culon
Caon
Corral na bato
Ningas
Silang
Litil
Mabatang
Calaiot
Balete
Jalan
Banay-banay
Pangull
Limbon
Banaod
Alolot
Indang
Buna
Amadeo
Balabac
Patingcajay
Diezmo
Pajalan
Mayapa
Siranlupa
Calamba
Pta Matilimbas
Lecheria
Los Ba
Maugani
Banlic
Mamaling
Puton
Bayubay
Tibay
Basaal
Pico Gonzalez
764m
Suplan
Bigaa
M. Maquiling
1135m
Paling-lupa
Sta Anastasia
M. Sungay
Talisay
Aya
S. Juan
Bañadero
Calocan
Batas
Bongo
Paling-lapit
Bililn
M. Mabil
Sta Tomas
Talaya
M. Olila
Tanauan
Seno de Bayuyungan
Pta Birinagan
Pta Plantan
Bayuyunga
LAGA DE BOMBON
Corda de Tagaytay
Caitinja
M. Cairilas
650m
M. Apayan
M. Talin
M. Caibinga
M. Malangtubig
M. Caltayn
M. Panaguan
M. Caycasinto
M. Pingtangubat
M. Caitalang
M. Pinagsagan
M. Caipagan
M. Tongod
M. Nagban
Bailen
Magallanes
Alfonso
Mendez Nuñez
Maragan
Tajo
Palopoc
Anolin
Matagbag Pico Ilang
Sinalin
Tamaran
Caiquibu
Lamampay
Tambo
Pinangluya
Indang
Nasugbu
R. Polo
A. Nayolbat
R. Amaya
Ternate
Maragondon
Naig
Labac
Timaban
Capitanan
S. Roque
S. Juan
Vijia
Tinga
El Fraile
Pulo Caballo
Buri
Dos Picos
690m
Pico de Loro or Pinagesan
Palungan or Merced
Paquito
640m
Butin
Bocal
Pinansayan
582m
Malanta
Palangui
Tarlac
Aleza
Caitapa
Yunaris or Malainin
Itamba
Caibuan
Maiana
Libuian
Caillampo
Amaga
Prop prop
Obispo
Frisil
Linao o Canuto
Ilang Ilang
Santiago
Conanchile
Malayigulan
Timalin
Tarlac
Pahayahaya
Jalan
Grande
Matingilog
Basaal
Tibay
Mabua
Tonduan
de S. Juan
Maugani
Banlic
Mamaling
Puton
Bayubay
Pulo Insan
Pta Tupac
Subag
Quinaga
Itagan
Pipindo
Limbolimbon
Paso de Diablo
I. Talim
Anosa
Pico Susundal
Malacab
Tab
Pulo Cala
Ban
Pulo Caballo
I. Ictoy
Mabalo
Lagaslas
Ambang
Mambo
Baltoc
Ligas
Zapote
Tunasantillo
Tancantuma
Lumabayan
Bucandala
Anabo
Mal-yasan
Salitran
Saban
Tibagan
Palimparan
Tumbao
Llantic
Carmona
Biñang
Salampaso
Tagapo
Cabilang baybay
Lauguibo
Calabozo
Sta Rosa
Mampalasan
Loma
Macabling
Pula
Sta Cruz
Cabuyao
Magiyon
Culon
Caon
Corral na bato
Ningas
Mabua
Grande
Matingilog
Basaal
Tibay
Bayubay
Puton
Mamaling
Banlic
Maugani
Calamba
Pta Matilimbas
Lecheria
Los Ba
Diezmo
Pajalan
Mayapa
Siranlupa
Patingcajay
Balabac
Amadeo
Buna
Majaban-cajoy
Lamampay
Tambo
Pinangluya
Indang
Alolot
Banaod
Limbon
Pangull
Jalan
Banay-banay
Mabatang
Litil
Silang
Balete
Calaiot
Pico Gonzalez
764m
Suplan
Bigaa
M. Maquiling
1135m
Paling-lupa
Sta Anastasia
M. Sungay
Talisay
Aya
S. Juan
Bañadero
Calocan
Batas
Bongo
Paling-lapit
Bililn
M. Mabil
Sta Tomas
Talaya
M. Olila
Tanauan
Seno de Bayuyungan
Pta Birinagan
Pta Plantan
Bayuyunga
LAGA DE BOMBON
Corda de Tagaytay
Caitinja
M. Cairilas
650m
M. Apayan
M. Talin
M. Caibinga
M. Malangtubig
M. Caltayn
M. Panaguan
M. Caycasinto
M. Pingtangubat
M. Caitalang
M. Pinagsagan
M. Caipagan
M. Tongod
M. Nagban
Bailen
Magallanes
Alfonso
Mendez Nuñez
Maragan
Tajo
Palopoc
Anolin
Matagbag Pico Ilang
Sinalin
Tamaran
Caiquibu
Lamampay
Tambo
Pinangluya
Indang
Nasugbu
R. Polo
A. Nayolbat
R. Amaya
Ternate
Maragondon
Naig
Labac
Timaban
Capitanan
S. Roque
S. Juan
Vijia
Tinga
El Fraile
Pulo Caballo
Buri
Dos Picos
690m
Pico de Loro or Pinagesan
Palungan or Merced
Paquito
640m
Butin
Bocal
Pinansayan
582m
Malanta
Palangui
Tarlac
Aleza
Caitapa
Yunaris or Malainin
Itamba
Caibuan
Maiana
Libuian
Caillampo
Amaga
Prop prop
Obispo
Frisil
Linao o Canuto
Ilang Ilang
Santiago
Conanchile
Malayigulan
Timalin
Tarlac
Pahayahaya
Jalan

Binacayan
Alima
Mabalo
Salinas
Pamplona
R. Zapote
Sucat
A. Buri
Gupang
Lagaslas
A. Alabang
Alabang
Ambang
A. Pasong diablo
Bayarga
A. Madali
A. Polotang
Mambo
Palico
Baltoc
Ligas
S. Nicolas
Munting-lupa
Imus
Tancantuma
Lumbayan
Bucandala
R. Zapote
Tunasantillo
R. de Bacoor
Anabo
S. Pedro Tunasan
S. Antonio
S. Isidro
Sald
Biñang
Malvasan
Salitran
Salampaso
Tagapo
Cabulang baybay
Carmona
Calabozo
Lauguiba
Santa Rosa
Saban
Llantic
Tumbao
Palimparan
Mampalasan
Perezdasmarinas
Loma
Macabling
R. Tibagan
R. Grande
R. Mating-Ilog
Pula
Santa Cruz
Cabuyao
Sampaloc
Magúyon
Culon
Corral na bato
R. Mabua
Caon
Ningas
R. Basaal
R. Tibay
Bayubay
Silang
Litil
Mabatang
Calaiot
Balete
Jalan
Banay-banay
Patingcajay
Diezmo
Pajalan
Balabac
Amadeo
Buna
Limbon
Pico Gonzalez
764m
Suplan
M. Sungay
Calocan
Batas
Bongo
Talisay
Aya
S. Juan
Bañadero
Seno de Bayuyungan
Pta Birinagan
Pta Plantan
LAGA DE BOMBON
Paso de Diablo
Limbolimbon
Itagan
Pipindo
Quinabulasan
Pta Cauit
Pulo Insan
Pta Tupac
Malatumbaga
Subag
Quinagatang
I. Talim
Anosa
465m
Naglumbang
Pico Susundalaga
Malacabang
Banla
Tabong
Pulo Banga
Pulo Malagi
Pta Talim
Calamba
Pta Matilimbas
Pta Mayondon
Lecheria
Los Baños
Bay
Dila
Poppoy
S. Antonio
Siranlupa
Bigaa
R. de S. Juan
R. de Tanauan
M. Maquiling
1135m
S. Nicolas
Paling-lupa
R. Cambanac
Calauang
Pico Uacat
Sulang-lupa
Dayap
Palayan
Sta Anastasia
M. Mabilog
Paling-lapit
Bililn
R. Mabacan
L. de Tiguios
S. Marcos
Sta Mª Magdalena
L. Palac-Paguin
S. Diego
Pandim
Tuco
S. Mateo
L. Calibato
S. Pedro
Nº Sª del Remedios
S. Francisco
Concepcion
L. Sampaloc
Palita
Alaminos
Nacampon
S. Pablo
S. Jose
Antipolo
Calijon
1612m
M. S. Cristobal
2250m
1623m
Sta Tomas
Talaga
M. Olila
Tanauan
R. Tigas
Pulo Calamba
Pulo Bay
Puton
Mamaling
Banlic
R. Mauganil
Quisao
Alto de Jalajala
A. Pinang
A. Baquinbon
Jalajala
Pico Cebollas
Pta Jalajala
BAY
Mabitag
Siniloan
Matiquio
Pta Inos or Masahong tubig
Pañgil
Paquil
M. Pingas
Paete
Longos
M. Calvario
Lumbang
Sta Cruz
M.S. Isidro or Salasad
Pagsanjan
Pinagsanjan
Cables
Sambat
Cabanbanang
Calit
Labuin
Sta Clara
Pila
Sta Niño
Bajanginan
Tipicuan
Magdalena
M. Matagion
M. Habang
M. Dumungao
Bancabanca
Masapan or Bumihan
Sula
Ilihia
Majaijay
Nagcarlang
S. Rafael
Lilio
Nª Sª de los Desamparados
Ube
Bocal
Gadalod
Gilaod
Cavinti
M. Layasin
Calibato
Tigbao
R. Bo'o
Cerro Maba
Luis
M. Placi
Puta
Pinagre
R. Labu
Tibatib
Balanacdro
A. Salaza
R. Peperan or
R. Bauan
R. Foce
R. Bancut
R. Botoc
AGUNA
DE

Zambrana
Mabitag
Siniloan
R. Quinagabijon
Quisao
M. Pusao
Matiquio
Pañgil
Malatumbaga
Pta. Inos or Masahong tubig
M. Placio
Alto de Jalajala
Paquil
Batondalit
R. Quinabihan
M. Camagen
M. Gulubat-babuy
M. Huatog
M. Pingas
A. Pinang
A. Baguinhan
Paete
S. Antonio
Pta. Piapi
Putol
Tansa
Loñgos
Jalajala
Pico Cebollas
M. Salay
R. Dahilan
R. Nangaiba
465m
Naglumbang
Pinagrealan
I. Calbalete
M. Calvario
Pulo Banga
R. Caliraya or
Pulo Malagi
Lumbang
Pta. Jalajala
Sta. CRUZ
M. S. Isidro or Salasad
Pta. Talim
Tibatib
R. Lamot
Pagsanjan
Sitio Agonopol
Pinagsauitan
Cables
Sambat
Cavinti
Cerro Mabag
Cabanbanang
Calit
Nagdapio Cascade
Lapuin
Butog
Santiago
A. Salazar
R. Hagonjan or Balanacdro
Sta. Clara
Pila
M. Layasin
Calibatan
Pta. Saley
Pulo Bay
R. Alipit
Tigao
M. Soledad
R. Bo'o
Pta. Matazas
Sta. Niño
Magdalena
Bajanginan
Pta. Mayondon
Tipicuan
M. Matagion
Mauban
M. Habang
Cascade
Luisiana
S. Antonio
Bancabanca
S. Isidro
R. Binamban or Luyaluya
Masapan or Bumihan
M. Dumungao
Bay
Dila
Sula
3 Cascades
Dayap
Ilihia
Sulphur Spring
Popoy
R. Foge
R. Bancut
R. Botocan
Sulang-lupa
Sampaloc
S. Nicolas
Palayan
Majaijay
Gadalod
Calauang
Pico Uacat
Gilaod
Lanot
R. Cambantog
Nagcartang
Tiang
Pindan
R. Mabacan
S. Rafael
Lilio
Ube
Luchan
R. Cabugan
S. Marcos
N. Sta. de los Desamparados
Bocal
Pta. Pitisan
L. de Tiquios
Pandim
Cacahuit
L. Palac
Paquin
Tuco
S. Mateo
Tinang-nay
Sta. M. Magdalena
S. Diego
L. Calibato
S. Pedro
Cerro Batahe
Pta. Pangao
R. Tigas
N. Sta. del Remedios
S. Francisco
Concepcion
1360m
M. Batisang
1623m
Banahao de Lucban
Banahao or Manasa
L. Sampaloc
Palita
R. Danacan
Alaminos
Nacampon
S. Pablo
Dapdap
M. S. Cristobal
S. Jose
1612m
2250m
Antipolo
Caliyon
E
B
A
Y

THE

National Geographic Magazine

VOL. X JUNE, 1899 No. 6

NATIONAL GROWTH AND NATIONAL CHARACTER*

By W J McGEE,

Vice-President of the National Geographic Society

On July 4, 1776, the dawn of a new era brightened humanity's horizon. The harbinger of enlightenment, the American Declaration of Independence was itself the product of antecedent forces and conditions of great significance. Some of these forces and conditions demand special attention from those who would trace aright the growth of modern nations.

For more than a century, the world's most vigorous attempt at colonization had been in progress along the Atlantic coast of North America. Viewed in the light of later knowledge, the stirring conquests of Alexander and Cæsar were little more than predatory forays in which the conquered gradually absorbed their conquerors; the epoch-marking expeditions of the Spaniards three centuries before and of the Norsemen four centuries earlier

*An address delivered before the National Geographic Society, March 28, 1899, as a summary of a series of lectures on "The Territorial Growth of the United States." These lectures, forming the "Lenten Course" for the year, delivered in Columbia Theater, Washington, D. C., during February and March, were as follows: "The Original Territory of the United States," by Honorable David J. Hill, LL. D., Assistant Secretary of State (printed in the March number of the National Geographic Magazine vol. x, 1899, pp. 73-92); "The Louisiana Purchase, Oregon, and Florida," by Professor Albert Bushnell Hart, of Harvard University; "Texas and the Mexican Accessions," by Professor John Bach McMaster, of the University of Pennsylvania; "Alaska," by J. Stanley-Brown; "Hawaii," by Professor Edwin V. Morgan. A preliminary outline of the general subject, entitled "The Growth of the United States," was presented at a meeting held in Boston on August 25, 1898, and printed in the National Geographic Magazine for September (vol. ix, 1898, pp. 377-386). The data relating to the territorial growth of the country were set forth in detail in the successive lectures; the summary was designed to indicate the causes and conditions affecting the progress of the nation as described by the eminent authorities who conducted the course.

still were as guerrilla sorties, producing little permanent effect save by frequent repetition; but the British colonial movement in North America was as that of a well-ordered army. Throughout this era more than ever before the Briton tested his own mettle; he came prepared to meet and overcome obstacles insurmountable by his contemporaries; when the ranks were thinned by starvation, as at pitiful Plymouth and fated Jamestown, by the Red Man's arrow or by strange disease, as at many other outposts, or by occasional desertion all along the line, the vacant places were filled with fresh recruits; and the vigorous army rested only after victory over an inhospitable land beset by forbidding forests and flanked by miasmatic marshes where warring aborigines and strange ills lurked in cruel waiting for the unwary. Other countries added their forces in some measure, with great ultimate benefit to the nation yet unborn; but the character of the movement was shaped by the inherent power and pertinacity of Britain's sons.

The stock represented by the colonists was a notable one. During the prehistoric ages, as the relics of caves and moorlands tell, Europe was overrun by primitive tribes which slowly attained the plane of pastoral and maritime culture; and the remains and trappings of their domestic animals and the ruins of their sea-going craft, which today enrich the museums of Europe, bear testimony to their prowess by land and sea. The shadowy history of two millenniums supplements the prehistoric record, and shows that the European tribes gained gradually in strength and culture, partly by normal growth, partly by the absorption of invading—and sometimes conquering—peoples from the east and south; the written record indicates, too, that blood was mixed and culture interchanged in such manner as to weld the tribes into larger groups, the germs of later nations. Now, in some way blood enriches blood and culture fortifies culture so effectively that, in all ages, it has been the people of blended blood and commingled culture who have dominated the continents and the world; and Europe was the first great theater (as America is the second) for these obscure but potent factors in human development. Most of the interactions were naturally confined to the continent; but, under a peculiar combination of geographic conditions, all the stronger streams of blood and all the higher waves of culture ultimately impinged on the adjacent isles of Great Britain and Little Britain—and with such marvelous effect that this areally insignificant spot on the

map grew apace into the greatest national power the world has seen.

Britain's supremacy, although commonplace to the educated, is the marvel of history; and there is no worthier theme for the thinker than analysis of the factors of that supremacy. The factors are far too many for present consideration; the blending of blood and the commingling of culture derived from an unprecedented number of notably vigorous tribes and peoples gathered from all Europe and hither Asia, have been mentioned; but a seldom-recognized factor is worthy of special note: After long puzzling over the Aryan problem, philologists have begun to realize that Aryan speech, with its numerous patois and dialects and languages, is a product of combination rather than differentiation; and some knowledge has been gained as to the modes in which the combination was effected. As tribe met tribe and as nation met nation (whether amicably or inimically), ideas and their linguistic symbols were interchanged, one of the modes of interchange being indicated in the well-known generalization that the conqueror takes the language of the conquered; so that a struggle for existence arose among the linguistic elements, in which the worse were gradually eliminated while the better survived. Through this survival of the fit, the originally multifarious tongues were gradually combined into a limited number of groups, the combination receiving great impetus with the development of writing and still more with printing; and the recorded modifications in the groups of tongues suggest what appears to be the ultimate tendency of linguistic development—*i. e.*, the development of the *word* as a discrete oral and graphic symbol for a discrete idea. Most of the Aryan tongues approach those of still more primitive character in the utterance of ideas in associative terms (or holophrasms), the association being expressed by verbal combinations and inflections; apparently the associative languages are the more economical of thought when the number of ideas is small, but the experience of mankind, as expressed in linguistic growth, clearly indicates that such languages are not adapted to the expression of the numberless ideas of abundant knowledge; and it is easy to observe that the associative languages of the Aryan stock are gradually losing their verbal mutations, or else becoming extinct because no longer adapted to living needs. Now, measured by the standards of linguistic development, there is one European tongue which towers above its neighbors, like Saul among his brethren—it is the English,

a language of simple vocables and simpler phonetic and simplest syntax, with little formal grammar save that borrowed from decadent or dead dialects, with an indefinitely extensible series of oral and graphic symbols for discrete ideas, with a vocabulary enriched by contributions from all other tongues, with a most economical orthoepy, and with a perfected lexicon save for the barbarous orthography inherited from lower culture. Language is a mechanism for shaping and expressing thought, just as the locomotive is a mechanism for transporting men and merchandise, and relative efficiency is beneficial in one case as in the other; throughout the world the proficiency of peoples may be measured (other things equal) by the efficiency of their languages; and the most efficient of all, as indicated by the laws of linguistic development, is that produced by the concentration and integration of the tongues of Europe and western Asia on the British isles. The Briton of three centuries past was strong in many ways; yet no small part of his strength must be ascribed to that efficient mechanism of expression which left him larger balance of brain energy for other duties.

The linguistic factor combined with others in giving strength to the Briton, and Britain began colonization with an unparalleled heritage of human excellence. The vigor of the Viking, the courage of the Celt, the nobility of the Norman, the energy of the Angle, the incisiveness of the Saxon, the dauntlessness of the Dane, the gallantry of the Gaul, the freedom of the Frank, the rovingness of the early Roman, even the stoicism of the Spartan, had come down to him through the blood of sires and dames of a hundred generations, or had grown up in him through centuries of intellectual commerce. The Briton of that day stood forth preeminent in perfection of body and brain, the paragon of human excellence; for his superb stock (made Anglo-Saxon by a figure of speech only) summed the excellencies of a thousand tribes and a hundred nations, concentrated through uncounted centuries. It was from this singularly prepotent stock that the American colonists sprang.

The British and Dutch and other north-European pioneers in the New World were something more than mere representatives of the strongest stock of humanity extant; they were picked men and women, impelled to adventure of body and mind through hereditary aptitude for vigorous activity. Many of them had made preliminary essays in adventure by land and sea before fixing eyes finally on Atlantic's shore of promise; some of

them, like the early Puritans, served an apprenticeship in settlement in other lands—and all were strengthened by the earlier experience to cope with the difficulties surrounding the land of their ultimate hopes. The migratory bird gains strength of wing by exercise, and acuteness of instinct by varied experiences; so the migrant people gain strength of limbs and lungs by the exercise of journeying, acquire culture through contact, and achieve strength of mind by exercise of faculty; and thus the average comers to American shores were not merely the select of their stock, but workers specially trained and developed during their earlier life. Then came the hard task of pioneering, under which the weakest fall out of the race while all others are strengthened; and in this way the stock still further improved with the generations grown up on America's soil. Meantime the same blending of blood and commingling of culture which gave prepotency to the parent stock went forward more rapidly than ever before: The British colonists were from different shires and provinces; they associated and finally consorted with one another, with representatives of the Low Country and other lands of northern Europe, and to some extent with the sons of France and the scions of Spain, while a trace of the strong blood of the aborigines was absorbed. Thus by the middle of the eighteenth century at latest, the American branch had outpassed the parent stock in its complexity of both blood and culture.

So it came about that all the factors of the fatherland were intensified in the character of the American colonists. Sorted out by the sieve of adventurous pioneering, invigorated by earlier experience, strengthened by contact with a rigorous environment, and revivified by admixture of blood and culture, the American pioneers were, even before the Revolution, the strongest people of the world in body and brain. This great fact, often ignored because so commonplace, cannot be too strongly emphasized; for the wonderful birth and marvelous growth of the American nation were nothing less than a miracle unless illumined by this fundamental fact.

A special factor contributed materially to that strengthening of the American colonies which matured in independence: A considerable part of the pioneers came for conscience's sake, in full confidence that, in this new land, they might think as they would and believe according to their bent, without bar of church or state; many others came because of instinctive desire for relief from irksome laws and customs—indeed not a few came in

durance because of infraction of often odious laws, fit for lowly serfs rather than loyal subjects. Northwestern Europe had become, indeed, a great reservoir of pent-up thought, of intellectual individuality seeking natural outlet; a part of the tense originality held to conventional bounds through which it wrought the intellectual renaissance marked by the immortal contemporaries, Shakspeare and Bacon; but the more aberrant thought merely seethed and bubbled and fomented discord throughout its reservoir. A flood-gate opened with the colonizing of America; and thinkers instinctively athirst for new motives gave character to the human stream flowing toward the sunset. Thus the American colonists were preëminent in that intellectual activity which is the germ of intellectual freedom. Others might lie supine in stocks and shackles of intellectual subjection, but not this intellectually prepotent people; and it was but natural that they should be the first to finally rend the fetters of mental serfdom.

Such was the stock, and such were the characteristics, of the American colonists who gathered from meager settlements scattered over a thousand miles of Atlantic coast to sign the American Declaration of Independence. They were not representatives of a nation, for there was no nation; they were simply strong men forced together by a common impulse toward freedom and equality. No other men bound to fatherland by blood and bone were ever put to so severe a test of moral strength; no weaker men would have risked the fatal chance; no earlier men in the history of the world possessed the profound physical and moral confidence required to consciously cast aside the lessons of history, to deliberately overthrow established conventions, and to calmly face the necessity of erecting a new national theory on a new plane of thought. The step was not one to be taken by weaklings; it could have been taken by no other living men than those chosen representatives of colonists whose veins carried the blood of the strongest peoples of the earth for uncounted generations, and whose brains throbbed with a heritage of vigor summing the intellectual progress of the world.

The issue of the Declaration introduced a new factor into the lives of the colonists—a factor equally efficient in war and in peace, a factor that no subject of kings can comprehend, a factor indeed that some free citizens have half forgotten: The ancestral tribes of the Briton in Europe and America were led and guided by personally-beloved patriarchs and priests, half-worshipped

heroes of land and sea; as the tribes grew into feuds and principalities and at length into kingdoms, the ties of loyal affection gradually hardened into the chains of royal subjection—and thenceforth the spontaneous individuality which of yore gave strength to the tribesmen was confined and in part curtailed by artificial class distinctions, most galling always to those of strongest faculty. The Declaration removed this instinct-felt burden from the minds of the colonists; at the last pen-stroke they became freemen, the peers of princes, ready to strive individually and collectively in their own interests and the interests of their loved ones; the yoke of the ruler was gone, his behest was less than the passing breeze, and each man was a monarch bound by no law save that of equal right to all men. The inspiration of freedom spread with the slow means of communication, and infused new life in the ill-fed, poorly-armed, and worse-clad soldiery, and in the wives and babes and aged ones by the lonely hearthstones—and thenceforth American arms were invincible. Since the Declaration the tide of battle has sometimes turned temporarily against the American; but every fair experience has shown that the self-inspired freeman stands on a higher plane than his king-inspired adversary, and cannot be conquered.

As the new factor of complete civil freedom inspired the soldier, it found lodgment in the mind of the statesman and gave new dignity to the strife for independence; and when the struggle ended the colonists combined on the boldest essay in territorial expansion in the history of the world. Russia, acting as a great nation inspired by belief in the divinity of kings, annexed Siberia after a long process of education of statesmen and soldiers; England, actuated in like fashion, acquired India through easy stages during which the minds of Briton and Hindoo were slowly conjusted to the changing condition; Spain, also under kingly control, captured continents through expeditions which slaughtered some natives and married others, yet never undertook complete conquest of any land; while George Washington and his handful of compatriots, only three million strong and scattered over three hundred thousand square miles of coast-plains and adjacent mountains, making no nation but only the loosest of confederacies, with lifelong experience of the practical difficulties before them, deterred by deeper appreciation of vested human rights than any predecessors possessed, were not content with the title to their coastwise zone alone: they looked to dim future as well as hardly brilliant present, weighed the needs of their children

and children's children, and solemnly undertook the duty of conquest over half a million square miles of little-known woodland haunts for warlike tribes stretching from the mountains to the Mississippi. Today this transmontane territory may seem small; to present geographic knowledge it may seem but a natural appendage of the Atlantic plains and mountains; in the light of the history of the nineteenth century, with its marvelous territorial growth of many nations, the expansion may seem trivial; but, so far as the light of 1779 can now be measured, the undertaking was one of singular boldness—of a boldness exceeding even that displayed in the Declaration of Independence. This first essay in territorial growth was worthy the well-grown progeny of humanity's finest stock; it could not have been made by any weaker people—indeed it would seem impossible that it could have been made even by the cumulatively prepotent colonial stock save through that inspiring self-reliance which is the boon of freedom.

Having undertaken the conquest of their outlying territory, the colonists set themselves to their task with serious persistence. True, the territory was for a time a bone of contention among the colonies; true, strong young lives were lost in numbers through disease and savage ambuscade, as the outposts of settlement were pushed forward; true, it became necessary to erect a part of the territory into a federal colony (an action contributing much to subsequent union); true, the hardest pioneering the world has seen was required to subdue the forests and lay the ways of traffic over and beyond the mountains; yet few among the founders appear to have regretted, or even to have fully recognized, the boldness of their essay. As the years grew into decades, the wisdom of the colonists became manifest; inspired in peace as in war by freedom, the pioneers pushed into the forests, acquired lands, built mills, laid out trails and stage lines, and above all inaugurated an era of public education the most noteworthy in any country; invention was fostered by a patent system, industries grew apace, race troubles began to settle themselves (albeit slowly), and the hard-working settlers developed that physical and moral strength which is the best fruit of voluntary labor. Meantime the blending of blood and culture, aided by the immigration of thinkers and workers, continued to raise the vigorous pioneers even above the plane on which the Declaration of Independence was conceived.

So began and ended the first great episode in American devel-

opment; it comprised an epoch-marking departure from a decadent national theory, the boldest essay in territorial extension recorded in the annals of nations, the partial subjugation of a vast wilderness, the inception of road-building, the erection of a public-school system on an unprecedented scale, and (directly through the initial expansion) the binding of the colonies into closer federation.

Enlightenment dawned with the Declaration of Independence in 1776; it broke into full day with the adoption of the American Constitution thirteen years later. It is needless now to review the masterly analysis of events leading up to the Constitution presented in the initial address of this course; the opinion of Britain's brilliant statesman that the supreme originality and beneficence of this document suggest divine inspiration, needs no more than passing mention; yet it is worth while to define in some detail the era in world-history marked jointly by colonial Declaration and federal Constitution.

The scientific student of mankind notes certain races distinguished by physical features; he also notes, as of much greater importance, certain phases of intellectual character which have been found to represent stages in development. The phases may be outlined in different ways, all agreeing in import; the most convenient definition is made in terms of law or social organization. The simplest phase and lowest developmental stage is commonly called Savagery; it is characterized by a social organization based on kinship traced in the maternal line. The second stage, commonly called Barbarism, develops into patriarchy and finally into allodialism, the forerunner of feudalism; its law is based on kinship reckoned in the paternal line. The third stage, conveniently called Civilization, rises in feudalism and grows into that monarchism whose last term is imperialism; the source of law and organization in this stage is traceable to recognition of property right, especially in land. The fourth stage of development may be called Enlightenment; its fundamental laws are based on recognition of intellectual right, especially freedom of opinion, with its necessary concomitant, a voice in public affairs.

The records of history and of observation among various peoples show that these stages arise in a certain order which may be traced to intellectual development. Savagery persists until definite recognition of paternity arises, when the next stage is spontaneously entered; and once the transition is effected,

through the enlarged knowledge, there is no retrogression save by extinction of entire groups. Barbarism in turn persists until population is so increased that personal contact between patriarch or priest and the people is necessarily replaced by arbitrary conventions, which arise spontaneously in such manner as to reflect both general knowledge and local conditions, so that the transition is effected, or partly effected, in various ways; in Europe it was partly brought about through the passage from allodialism to feudalism, which (although but a small part of the entire change) involved the development of a new order of law, according to Sir Henry Maine; with the aid of a beneficent cult, it was wholly effected in the arid land of Palestine, whence the leaven spread throughout much of the world in the form of more altruistic law than is known to lower culture. Civilization evinces no tendency toward retrogression into the lower order of law, yet there is a constant tendency toward a higher order marked by the limitation of hereditary monarchies, by revolutions at first bloody but gradually growing bloodless, by the separation of church and state, by the abrogation of odious laws, and in many other ways; in certain instances the form of governmental organization known as military despotism seems to bridge the chasm between civilization and enlightenment, much as feudalism connected barbarism and civilization in Europe during the last millennium. Enlightenment reveals no retrogression, save through senile surrender of self-reliance or hereditary debility which lead some to seek the support of stronger fellows; certainly no nation that has once tasted intellectual freedom in its fullness ever turned back toward mental bondage. Accordingly, the order of the developmental stages is definite, invariable as the movement of the planet in its orbit, as the flow of the river in its channel, or as the growth of the insect from egg to larva, from larva to pupa, and from pupa to imago; and the normal law of human progress is from savagery through barbarism to civilization, and then in due course to that enlightenment in which the mind is released from trammels and the physical being inspired by the boundless possibilities of free action.

So the student of the social stages sees four great milestones along the course of human development; the first marks dimly the origin of man on earth as the lord over lower creation; the second, seen vaguely in many lands, marks the passage from the most primitive condition to a higher stage through normal

growth of knowledge; the third marks clearly the birth of nations, chiefly through the most beneficent belief the world has known; the fourth marks the passage of humanity into its best estate, in which individual strength of body and brain is the seal of nobility.

After half-imaginary glimmering, as in the "Republic" of Plato, the morning star of enlightenment rose first on the Alps of Switzerland. The early Swiss were a hardy stock, sifted by their own strength from the mid-European assemblage of tribes and nascent nations; their vigor was increased by adventurous life, while they learned the lesson of mutual helpfulness in ceaseless strife against rocks and ice; and thus they acquired, earlier than other strains of the European stock, that deep respect for self and regard for neighbor which bears fruit in altruistic government. The strong Swiss character is displayed in many ways; they are types at once of individual independence and of unselfish devotion; though clannish as Scotsmen, they have sown the seeds of science and other learning in every cultured land; they love their hard fatherland beyond all other men save the Arab and Bedou and Papago adorers of their native deserts; and it is not surprising that their combined individuality and solidarity forced the fruit of humanity even before the bud burst into flower in softer lands. Such was the character of the people that, when the yoke of the oppressor galled, a liberator stood ready to cast it off. Inspired by relief from her fetters, Switzerland sprang into national being; she stands today a distinct and peculiarly significant type of nationhood.

The sun of enlightenment tinged a broad horizon with the Declaration of American Independence, and rose in its fullness when the colonies were united as states. The time was fully come, for the intellectual quickening would not be stilled. America had her idolized Washington, as Switzerland her idealized Tell, and, through the singular capacity of the First President and his fellows, the transition from one culture plane to another was made at once and for all time with a facility and completeness which are a constant marvel to the student of the commonly devious and dilatory ways of human progress.

The examples of Switzerland and America have been widely followed. The soil of the western hemisphere has proved peculiarly fertile for free institutions; our neighboring republic of Mexico is a brilliant instance; a score of Central American and

South American republics have taken shape or are still coming up through successive essays in which grinding despotism constantly diminishes, while the bloodshed of the revolutions as constantly decreases; even the somber isle of the Antilles, Haiti, is essaying republican law and order. Beyond the Atlantic, France has seized and still clings to republicanism, despite the disposition toward despotism in which two-thirds of her sons more easily rest; while progressive Britain has grasped the substance of altruistic government through a thin shadow of conservatism brightened by personal affection for the most gracious sovereign the world has seen. Other nations are treading the path surveyed by Britain's eldest-born—that path along which, under nature's law of progress, the parent must follow the child.

The earlier episodes in the building of the American nation marked an era in the making of the human world; they are accordingly of the most profound and far-reaching significance. Other episodes followed in turn; but these (unless the events of this year 1899 be otherwise adjudged) have been episodes in national history merely.

The second full chapter in American history records the acquisition of the vast territory of Louisiana and Oregon, an acquisition through which the national area was more than doubled, while dominion was extended to the Pacific coast of the continent. This extension was not an easy one—indeed it was our boldest essay in areal growth, with the sole exception of that original stroke through which the transmontane and cis-Mississippi territory was taken. The difficulties encountered by the nation in making this essay were enhanced by a certain conservatism on the part of the Chief Executive of the time. True, President Jefferson was scholar and scientist as well as statesman, and had projected an exploring expedition through the Louisiana territory even before its acquisition; true, this expedition was dispatched in accordance with his plans even before the purchase was consummated, and resulted in fixing title to Oregon as gained through earlier discovery and later settlement; yet the President and his advisers held back from the bargain of a million square miles of adjacent territory for a bagatelle until they were forced to the mark by many conditions, including an incipient revolution on the part of the people. This popular movement, more significant than any presidential policy, was an expression of growing national character, itself the product of

those forces and conditions to which the birth of the nation was due. With the close of the Revolution, the coastwise colonists forged their weapons into implements of peace or turned them against savage tribes; ambitious sons of hardy sires forced the forests, made conquest of the wilderness, and began the development of a riparian commerce which required the freedom of the rivers, especially the Mississippi; year by year the material of commerce increased with the extension of agriculture and the development of new industries to which the hard-handed and strong-headed settlers instinctively turned; and, under the ceaseless stimulus of individual freedom, each generation grew stronger than the last and sprang more readily toward conquest over lower nature—or over alien nation that might stand in the way. The sons of the sires who had broken Britain's rule were not to be balked by the feeble claims of Spain, or the diplomatic demands of once-allied France; the land for which their fathers bled, with all the privileges thereunto appertaining, were theirs by treaty right in clear conscience and common sense; and twenty thousand of them rose in arms to defend this right with lives enriched by the blood of all the best of mankind and the ripened knowledge of generations. The popular movement of the time proves that the strong character inherited by the colonists and strengthened through their stirring activities had gained still further strength through the sublime exercise of subjugating a vast wilderness. History will always credit to Thomas Jefferson and Robert R. Livingston the noble national achievement consummated in the acquisition of the fertile plains and priceless rivers of Louisiana territory; but the student of moral forces can never forget the agency of those American citizens, heirs to the divine right of kings, who exercised their prerogatives so efficiently and so wisely in 1803. Oregon territory, with the rich states into which it has grown, must always stand as a monument to Jefferson's sagacity and foresight; but the splendid states into which Louisiana was reconstructed form a still nobler monument to American citizenship—they were acquired by the people themselves for the use of the people forever.

The acquisition of Louisiana and Oregon reflected a national character made up of individual characters shaped during a hundred generations; at the same time it proved a power in further shapement of both personal and national character. Confronted by new problems and enlarged fields of activity, the

pioneers turned toward fresh conquest of nature: They pushed over the plains, replacing buffalo and deer and antelope with kine and sheep and swine; they felled forests, and began the development of the world's greatest lumbering industry; they broke the virgin soil, converting the profitless acres into fertile fields and inaugurating a world-epoch of agriculture. As the produce multiplied they cut canals more energetically than any other people has ever done, and developed a large and luxurious steamboat traffic, long the wonder of the nineteenth century. The hunter and trapper led the lumberman and farmer in a long chase ending at the foothills of the Rockies; then Whitman and others crossed the mountains and completed by settlement the task begun by the explorations of Lewis and Clarke. The Indian warfare served to keep alive the sense of eternal vigilance, while a brush with the British proved anew the invincibility of freemen; yet withal the noblest conquest was that over the subtle powers of darkness which have trammeled mankind from the beginning—for knowledge was diffused more freely than ever before through the public school system, genius was fostered through the patent system, and the citizens were enabled to look down on lower nature from ever-new and ever higher points of vantage. The forces of dull nature move mechanically, but humanity's powers are multiplied by inspiration and stimulated by shock, and that quick outpushing of the bounds of American enterprise which came with the doubling of territory stimulated American faculty, set the personal and national pulse athrob, and nerved the freemen to even swifter and nobler conquests than those of their eventful earlier history. The acquisitions of 1803–1805 changed the map of a continent; they wrought far deeper change in the minds and characters of Americans.

The acquisition of Florida, albeit significant in many ways, formed but a ripple in the stream of national progress; not so the self-sought admission of Texas at the end of the most dramatic chapter in the history of the struggle for freedom—a chapter not yet properly signalized in the world's literature. When the Austins, father and son, migrated from Connecticut to Virginia, thence to Missouri, and finally to Texas, they became the nucleus of a group of adventurous spirits to whom the growing conventionality of eastern and southern sections was irksome, and in the free air of the Lone Star region they developed exultant strength of body and mind. At first hunters and prospectors and pioneer plowmen—"brier-breakers" in their own

vernacular—they soon planted a stock-raising industry by which other enterprises were supported later, and so began conquest of the southern plains. The semi-lawless but unprecedentedly strong character of young Texas grew with the growth of ranger and brier-breaker; and, whether the character be admired or not, it played an essential part in the later growth of the nation. Without the ranger, the plains and mountains would have been far slower in subjugation; without the brier-breaker, the Mexican accessions would not have been made, and California's gold would have enriched another country; and without the Texan, history's most tragic episode in human strife would not have been. Savagery must have reeked with unwritten tragedies; doubtless tragedies dotted the unrecorded path of barbarism in its early gropings; but the world's writing cannot parallel the tragedy of the Alamo, when a hundred and forty Texans stayed for days an army of forty times as many Mexicans, of whom they slew four times their own number. The charge of the Light Brigade, immortalized in song and story—when

> "Into the jaws of Death,
> Into the mouth of Hell
> Rode the six hundred"—

has stirred the souls of millions and shaped the lives of thousands; yet the brilliance of Balaklava pales beside the glory of the Alamo. Even storied Greece, despite her tinge of heroic myth, held lower place: "Thermopylæ had its messenger of defeat; the Alamo had none." Travis and Bowie and Crockett were buoyed by freedom's benison into typical Americanhood; they could and did sell their lives to the last throb of their hearts, but they could not surrender; they could and did erect a living tomb and there bathe themselves in the blood and bury themselves neath the bodies of slaughtered foemen—for every blow was struck for freedom. The strong pulse of America beats fuller forever because of the mortal tragedy enacted in the shadow of the Cottonwood by these immortal actors.

It is the law of war that the strongest and bravest fall; it is the paradox of war that each such sacrifice is seed of richer strength and spirit. So the tomb of freedom within Alamo's walls became the cradle of liberty for the Lone Star empire and state. The exultant death-cry resounded over Texas' plains; it transformed a renegade into a hero and roistering rangers into invincible avengers; "Remember the Alamo" became the

direst slogan of history; and Sam Houston led his little band with such deep skill and mysterious swiftness and dogged disregard of death that the great army of Santa Aña was first terrorized and then defeated ignominiously—and Texas rose into republican freedom.

The hard-fought liberation of Texas was an expression of personal and national character, yet the events were reflected in a million minds with such inspiring effect as to raise Americans to a new vantage-point in their struggle for conquest over the material and the moral. Without the Declaration there would have been no trans-Appalachian acquisition of territory; without this conquest there would have been no Union, no Constitution, no Louisiana; without Louisiana and Oregon there would have been no great nation; without Texas there would have been no America, in the sense in which we and others employ the term; and the admission of Texas into the Union, albeit dilatory, was but an expression of that manifest destiny which attends the spread of enlightenment wheresoever liberty's luminary shines.

The next large chapter in American history was opened by an echo from the preceding chapter; for international feeling engendered by the admission of Texas rankled until removed by the treaty of Guadalupe Hidalgo with its acquisition of half a million square miles of territory (including California), an acquisition supplemented five years later through the much-derided Gadsden purchase. These accessions marked growing self-reliance on the part of the nation, itself the expression of individual strength; yet the first was barely consummated before it began to react on character with unexpected and unprecedented vigor. The golden gleam of Yuba's placers shot athwart the mountains and plains and caught the eyes of the hardiest sons of a vigorous ancestry; and a voluntary industrial army laid overland trails, or devised sea routes, of six months' journey toward the sunset. Like the British colonists and the Texan rangers, they were picked men and chosen women; like their fathers and mothers, they were strengthened by the test to which they were subjected; and in good time they were followed by progeny of the finest physical and mental constitution the ages have produced. Taught by a beneficent school system, educated by a judicious patent system, and inspired (like all of their fellows) by freedom's boon, the "Forty-niners" and their followers carried creative faculty with them, and invention kept pace with their

travel and their later labors in placer and shaft. A consequence was unprecedented development of mining, not merely in material production but in the construction of appliances and the discovery of new applications; a further consequence, following duly as the brightened intelligence of California spread over the land under the cumulative law of mental growth, was the opening of a new era in the development of devices for transportation, so that California quickly made America the foremost railway nation, and later the leading telegraph and telephone nation of the world. Curiously combined with the material growth of the Pacific coast was a significant moral growth, at first apparently aberrant, though soon falling in line with the great principles established by human experience, and bringing some benefit to the law of the land. Beyond the reach of courts and processes, the pioneers were forced to become a law unto themselves; this they did by aid of Judge Lynch, who attained his greatest eminence in the chaotic courts about the Golden Gate; yet it is a meaningful commentary on American morality that, with few exceptions, justice was wrought by the miners and freighters and pioneer farmers—justice of a quality not exceeded by that of the highest tribunals of civilization and enlightenment. Perhaps the severest test to which American character has been put was that of pioneer California; yet it was found not wanting.

The influence of the Mexican accessions on the nation has been profound: Gold beyond that of the Indies, fruits more luscious than those of Mediterranean shores, wool-products finer than those of the vale of Kashmir, have been showered over the land; returning pioneers have brought back the breath of a stimulating clime; our minds have expanded to encompass a home of El Dorado, a region of giant trees and proportionately big enterprises, a province of canyons and mountains sublime beyond compare; we have no large industry unaffected by conquest of once-scorned California, no national characteristic uninfluenced by the spirit of the Pacific coast; and throughout all America there is no personal character that has not been in some way touched—and always for the better—through the influence of this national possession. America has become a nation of established characteristics; without the Mexican accessions she would be another country.

A slender affluent entered the stream of national progress with the Alaska purchase twenty years later. For a quarter of a cen-

tury its contributions to material prosperity and national character were limited; but within five years the problems presented by its frigid valleys and fruitful fishing-grounds have come into prominence, while its gold has become a bait for settlers, as did that of California a half-century past. Within a year Hawaii has come to us, like Texas, of her own volition; Puerto Rico has come through fortune of war for humanity's sake; Cuba and the Philippines have been liberated in such manner as to demand policing yet to promise early entry into the sphere of enlightenment. The ultimate effect of this series of additions to the nation—past, present, and prospective—may not be foretold fully, though it may be prevised in terms of past history: The trans-Appalachian acquisition by Washington and his compatriots united the colonies in a nation, opened an era of education and invention, and raised a race of pioneers; the acquisition of Louisiana and Oregon by Jefferson and the people brought an era of canal-building and steamboating, revolutionized agriculture, and diffused intelligence beyond previous imagining; the admission of Texas ushered history's most heroic struggle for liberty, lifted industries connected with horses and kine to a new plane, and introduced a type of manhood required for further conquest; the Mexican accessions brought wealth and national power, made America the foremost railway and telegraph nation, enlarged intelligence, strengthened character, and produced the world's highest type of humanity. In the light of these pregnant facts, it seems safe to presage important physical and industrial and moral advances through the influence of the later acquisitions; and if Cuba and Puerto Rico, Alaska and Hawaii, and Luzon and her neighbors do not make America the foremost naval and shipping nation of the earth within a quarter-century, then experience stands for naught, history is a delusion, civilization a failure, and enlightenment a farce.

In reviewing the territorial growth of the nation, it is needful to remember that the forces and conditions which led first to the predominance of Britain and then to the independence of the American colonies are still in effect. The blood-blending and culture-commingling have continued increasingly until the American has come to represent the world's most complex ethnic strain, and his culture to comprehend that of all other ages and lands in addition to his own rich product. The selection of the strong by pioneering has been repeated over and over again, and

the prepotent progeny have gone back to vitalize the weaker vessels with little loss of their own vigor, and each generation has enjoyed that stirring exercise required to raise it above the ancestral level. More than all else, the generations have been lighted on their way by Freedom's torch: they have been not only permitted but constantly encouraged in the development of latent power; they have been educated better than any contemporaries; their hands and brains have been developed by the most varied activities of any nation; they are better fed, better clothed, better housed than peoples of other lands and climes; their self-respect has been built into a structure so strong (as shown by Texas and California) as to withstand every shock; and through the combination of all these factors they have become fit representatives of humanity, invincible in war yet generous to fallen foes, subjugators of lower nature, and conquerors of the powers of primal darkness—in every way easy bearers of the world's highest culture.

Such are America and the Americans at this end of the nineteenth century.

The progress of the American people has not been effected without opposition from some of their own number. A few of the original colonists deserted and fell back into bondage; the Revolution produced some tories and traitors and more mere doubters; the trans-Appalachian territory was a bone of contention in the Continental Congress; the epoch-marking Declaration and Constitution were opposed by a minority of the nation-makers. Despite the popular approval, the acquisition of Louisiana aroused some sentiments and words of antagonism, which were repeated when Texas sought admission, again when the Mexican accessions were under consideration, and once more—with the same lugubrious intonation—during the present year 1899; yet in every emergency the stronger have carried the weaker, and progress has gone forward.

At every stage even unto today the voice of the prophet of evil has been heard. Stolid representatives of Britain's virile stock, from Herbert Spencer to Sir Edwin Arnold, rail against the unseeming celerity of movement of the typical American, and predict hospital or mad-house as his goal; they forget that the American but moves at a normal pace shaped through his more varied ancestry and richer heritage of successful exercise than his contemporaries, that there is less overwork in America than

in any other progressive nation, that in average expectation of life as in stature the American leads the world, and that even in this active land ten men rust out where one wears out. The faint-hearted shudder at the figment of Wall street and the phantom of the monopoly; they forget that the multi-millionaire's daughter becomes an angel of mercy whose beneficence softens hundreds of sick-beds and lengthens scores of lives, and that the best organized American monopoly founds a university whence a thousand students go forth annually to diffuse higher knowledge and better capacity for self-support among a hundred thousand countrymen. Pessimists cower before the formless monster of political corruption which they conceive to gnaw at the vitals of our national institutions; they forget that the executive of the state containing our so-called corrupt metropolis was elected on the sole platform of honest manhood, and that our present Chief Executive is one to whom, more than any predecessor, the will of the people is law. Today the trembling ones shrink shrieking at the self-conjured ghost of imperialism, as if empire could grow in freedom's soil, as if the bright-winged papilio of constitutional law might, forsooth, creep back to the chrysalis where the monarchical pupa grew in centuries past; these do more than forget—they never knew that the culture-plane of constitutional control is so far above that of imperial rule that the subject of empires can never see its inspiring expanse; they ignore the Law of Human Progress (seen through the coördination of other sciences in the Science of Man) under which humanity moves, in ways orderly as planetary orbits or vital stages, from savagery into barbarism, thence into civilization, and finally into enlightenment, never dropping backward save by extinction; they comprehend not the full significance of humanity's law, vaguely expressed as "manifest destiny," which proves that imperialism is impossible on the plane of enlightenment, and that the peoples of the earth are steadily rising from plane to plane with the certainty of ultimate union on the highest of the series. Would that the ever-present prophet of evil might always fail of honor in his own country!

"Take up the White Man's burden," chants the bard of his generation in the ballad of the century:

> "Take up the White Man's burden—
> The savage wars of peace—
> Fill full the mouth of Famine,
> And bid the sickness cease."

The white-skinned man indeed leads the world today; but he is not the only burden-bearer. In savagery the strong man leads his fellows, while the weaker fall; in barbarism the strong man leads his family, turning perchance in pity to the weakling; in civilization the strong man supports subjects and feeds their families, and reaches out in helpfulness toward other subjects; but in enlightenment the strong man not only carries the weak until cured or coaxed into strength, but seeks ever to lift to his own plane the world's weaklings, whether white or yellow, red or black. Civilization indeed makes noble subjects of Oriental princes, but enlightenment makes leaders of nations in Indian Juarez and half-Indian Diaz, and leaders of minds in African Douglass and Booker Washington; the dark-skinned man is no less human than his lighter brother, and on the plane of highest intelligence it is the self-taxed task of the white giant to lift darker fellows to liberty's plane rapidly as the duller eyes can be trained to bear the stronger light. Nor is this the whole burden; for in enlightenment, much more than in civilization, it is the duty of the strong man to subjugate lower nature, to extirpate the bad and cultivate the good among living things, to delve in earth below and cleave the air above in search of fresh resources, to transform the seas into paths for ships and pastures for food-fishes, to yoke fire and lightning in chariots of subtly-wrought adamant, to halter thin vapors and harness turbulent waters unto servile subjection, and in all ways to enslave the world for the support of humanity and the increase of human intelligence.

Of such are the tasks in which the strong exult and glory, whether their skins be light or dark.

Would that poesy's living fire and science's finéd gold might meet to gild the noble fane of all humanity; would that Parnassian light might shine on the whole long path of man's advance as it shines today on the kindliest step of kingly progress; would that the Strong Man of the ages might lodge in a thousand million hearts, as the White Man of the century lives on a hundred million tongues, through genius' touch! For it is the Strong Man of the races and eons who has borne the burden of the world and made humanity.

The American people, offspring of the strongest stock the world has seen, gained early strength by exercise, and raised human law to a new plane a century and a quarter ago; with half a

dozen great leaps they have sprung forward, at once in territorial growth and strength of character and breadth of intelligence, outpassing their fellows of older nations; at every step they have borne the Strong Man's burden—and few among them today would willingly cast it off.

JOBOS HARBOR

Mr Robert T. Hill's allusion to the rediscovery of Puerto Rico by the Americans is a witty characterization of our ignorance of that lovely island. Among other rediscoveries made there, is that of the harbor of Jobos, for as long as 30 years ago Wappäns, in Stein's "Handbuch der Geographie," said that "especially Jobos might be made a seaport of great importance." The Spaniards, however, never charted it. Perhaps that is why the American troops did not land there. Be that as it may, it did not escape the keen observation of Captain Whitney, the young army officer who risked his neck in traveling through the length and breadth of Puerto Rico at the outbreak of the war in humble disguise, and who reported on the possibilities of the place. Later on General Roy Stone brought to Washington a sketch of the harbor, showing a few soundings, and finally the U. S. Coast and Geodetic Survey undertook the mapping and charting of the locality, and the preliminary survey at this date has probably been completed by Mr Hodgkins, commanding the *Blake*.

The western entrance to the harbor is about 25 miles east of Ponce. The harbor itself is formed by a line of low wooded coral reefs, between which and the mainland there is a perfectly sheltered narrow sound with ample depth for vessels of moderate draft. Vessels of the deepest draft can enter through the western entrance, but our present knowledge leaves us in doubt as to the width of the channel inside, and not until the *Blake's* work has been received will the actual value of the harbor be known. A second entrance, four miles to the eastward, bears the suggestive name of Boca de Infierno, and carries but 12 feet of water. From this entrance the sound runs about two miles north and then two or three miles to the eastward, forming a bight in which the water is decidedly shoaler than in the western part.

O. H. Tittmann.

SAMOA: NAVIGATORS ISLANDS

By Commander H. Webster, U. S. N.

The Samoan islands, some 4,200 miles southwest of San Francisco and 420 miles northeast of the Fiji islands, were discovered by the French navigator Bougainville in the year 1768, and with the single exception of the Hawaiian group are the largest and most populous in the Pacific.

Geographically, the Samoan group lies between 13° 30′ and 14° 20′ south latitude, and between 169° and 173° west longitude. There are thirteen islands in the group, but a large proportion are little more than barren volcanic rocks. Three only are inhabited, for three alone possess the wherewithal to support a population. These three islands, which have come into such prominence within very recent years, are Savaii, with an area of 700 square miles, Upolu, with 550 square miles, and Tutuila, possessing but 55 square miles. On Tutuila is situated the landlocked harbor of Pago-Pago. The population of the group is variously given at from 30,000 to 50,000, but the first-named figure is probably nearer the truth.

NATIVE ROAD IN SAMOA

The highest peak in the islands is on Savaii, a fine specimen of volcanic mountain 4,000 feet high and, in common with others of the archipelago, clothed to its top with a thick growth of cocoa and other palms, bread-fruit, guava, and numberless specimens of tropical vegetable life. Upolu is almost entirely surrounded by those singular coral growths called barrier reefs, wonderful submarine walls or breakwaters built up to the level of the sea and forming fine lagoons by means of which communication from point to point is facilitated in all kinds of weather. The distance from the reef to the shore varies from a few feet to three miles.

The climate of the Samoan archipelago is distinctly tropical, the temperature seldom rising above 100 on the Fahrenheit scale or falling below 70. During a large part of the year the winds are moderate and from diverse directions, so that on the elevated plateaus near the ocean the climate is not disagreeable or unhealthy. Beginning in February, however, and extending through the entire month of March, the islands are subject to violent hurricanes which often do immense damage to plantations and dwellings. The historic tornado of March 15 and 16, 1889, will be recalled as an example of the cyclonic fury of the winds which visit these latitudes at long and irregular intervals. Throughout the year frequent thunder-showers temper the atmosphere and supply

GERMAN PLANTATION IN SAMOA

STREET IN APIA

the necessary irrigation for the rank vegetation growing on every available spot, from the beach to the highest pinnacles of the mountains that rise from every island of the group.

The Samoan language bears a strong family likeness to those of many of the other Pacific islands, but its resemblance to the Hawaiian tongue is so remarkable as to induce the belief that the two were derived from a common parent stock. It has been observed, however, that any attempt to ascertain which of the Polynesian dialects can be considered the mother tongue must prove fruitless, as the absence of a record of any sort, beyond the transmission of crude history through tradition, effectually blocks the road to investigation. By some writers the insular language is regarded as original, in the usual acceptation of the word, implying no more than such a degree of obscurity as would render useless all attempt to trace the line to its derivation. The Hawaiian and Samoan natives are able to converse understandingly on the subjects involved in their simple life, but each claims that the differences from his own existing in the other are merely corruptions of his own speech. In this respect, however, these islanders are not unique.

The food of the islanders is mainly vegetable; bread-fruit, taro,

INTERIOR OF SAMOAN NATIVE HOUSE

yams, bananas, and cocoanuts are the staple articles, but the lagoons and reefs abound in fish and shell-fish, among the latter being a fine variety of shrimp, of which the natives are very fond. Following the discovery of the islands by Bougainville and the celebrated Captain Cook, pigs and fowls found a lodgment here, until of late years a wider variety in the native dietary has gained foothold. Fishing is carried on solely with spears and nets, as the inhabitants of the waters surrounding Samoa decline to use the hook, be it baited ever so alluringly.

The cooking among the natives is done by the men, and if a woman is seen cooking it is regarded as just cause for jeering at the men of her family. No spices or seasoning are used, but salt water is sparingly employed to give additional flavor to food. From taro and bread-fruit is made *poi*, which is extensively eaten in all the Polynesian islands, the process of manufacture being everywhere the same. The native meal hours are not very different from those usual in more civilized parts of the world. The principal meal comes in the evening, when the whole family meets—men, women, and children eating together. They have no tables or other furniture, but seat themselves cross-legged on mats round about the circular house. Each person has his portion set before him on a bread-fruit leaf. After the

meal, water to wash the hands and lips is passed around, and a rub on the nearest post is the table napkin.

Hospitality is a leading virtue, though often in many parts of the group its application involves sacrifices of everything held in highest esteem by the simple islander. Traveling parties can go from end to end of the group without expense for food or lodging, and the official "Large House," maintained by each village, is seldom vacant. This peculiar institution is provided by

SAMOAN GIRLS MAKING KAVA

contributions from every family in the place. One of the results of this type of hospitality is that the Samoan has become a great traveler. Large parties, resembling our "tourists," band together and go from town to town and from island to island.

The native drink, or *kava*, is prepared from the root of the *Piper methysticum* and is but mildly intoxicating. In fact, my own experience with this liquor is that it does not sensibly affect the head, but makes the knees tremulous. The head of a family when taking his cup of *kava* at the beginning of the evening meal pours a little of it on the ground as a sort of drink-offering to

the gods. Formerly *kava* was prepared by the girls of the family. The root, after being carefully washed and cut into thin slices, was chewed into a fine mass and thrown into a large wooden bowl of water. After quite a prolonged stirring, the mixture was strained of its solid constituents by passing through it a bunch of cocoanut fiber, leaving a grayish, pungent fluid, with a pleasant taste of peppermint. As soon as made it is ready for use, and is passed around in cups made of shells of the cocoanut. In more recent times the root is grated or pounded instead of being masticated; but, while this is undoubtedly a cleaner process, it is said by connoisseurs to impair the flavor of the *kava*.

A favorite amusement for old and young is the *siva*, the word meaning to dance. It is not, properly speaking, dancing, but is more like an acting charade, for, although accompanied with music, singing, and slapping of hands, the *siva* has no steps or regular figures, its motions consisting of slow pacings, bodily and facial contortions, and what may be called descriptive acting. The actual *siva* is performed by girls. The dancers are prepared for the *siva* by copious smearings of cocoanut oil applied by some female relative, followed by a careful adorning of the glistening body with the *lava-lava*, or loin cloth, and flowers for the hair and neck. The subjects represented all relate to the life of the islands, and are frequently given with a verisimilitude which leaves nothing to the imagination. Courtship, marriage, and the care of children find a leading place in the representation, while making *poi*, spearing fish, paddling the canoe, gathering fruit, and also some of the "living pictures," are not omitted. As the pace grows livelier frequent draughts of *kava* incite the dancers to renewed activities, and often, as the excitement grows, subjects of a grosser nature are given, and frequently before the conclusion of a first-class *siva* the girls will divest themselves of even the pretense of clothing, the *lava-lavas* following the flower garlands until the space in the hut devoted to the performers is filled with a swaying mass of glistening bodies, and the odor of the cocoanut oil becomes simply overpowering to the few civilized onlookers who are permitted to witness a genuine *siva*.

The Samoan has a great liking for games of skill. The favorite sport throughout the islands is a sort of quoits, only, instead of being played with disks of stone or metal, the implements are long, slender rods, which are cast with a peculiar turn of the wrist that causes them to go through the air with a certain humming or singing noise. These rods are marked or numbered,

and the thrower casts the same rod each time. The distance to which a skillful player will throw his rod is astonishing, the one making the longest throw a certain number of times in succession being the winner. One of the results of contact with the white man has been the introduction of card-playing, especially of casino, or "Sweepy," as the natives call it. Cricket has taken a strong hold upon the pleasure-loving native, and so all-pervading was the influence of this game during the reign of Malietoa that it was no uncommon experience for us to come upon a native village utterly deserted by its inhabitants, for the entire population would be in a neighboring clearing, watching or taking part in the favorite game of the British, from whom, of course, they had learned it.

In the construction of his simple water craft the native follows the time-honored practice described so graphically by De Foe in "Robinson Crusoe." It is a dugout, made partly with fire and partly with the rude chopping implements his skill has enabled him to manufacture. This frail craft can be navigated with safety through heavy weather which would swamp more pretentious boats, and is to be found on far-distant voyages among the islands of Polynesia.

Considerable romance has always attached to that singular material called by the natives *tapa*. Though called a cloth,

SAMOAN NATIVE CANOE — DUGOUT

tapa is in no sense a woven fabric, but in the material employed, as well as in the processes of its manufacture, is more a paper than a cloth. *Tapa* is the inner bark of *Broussonetia papyrifera*, a member of the mulberry family. It is beaten out on a board and the narrow strips are joined together with a paste of arrowroot, so as to form any width or length required. The juice of berries, red clay, and the soot of the burned candle-nut furnish the coloring

SAMOAN BRIDE

matter with which to form the figures and designs generally seen on the native cloth. The fabric can be beaten out as thin as the most delicate tissue paper, and in this form is soft and smooth in texture. Fine mats are skillfully woven by women from the leaf fibers of a species of *pandanus*, which are scraped as thin as tissue paper. They are regarded as heirlooms and are carefully preserved.

Among the men of these islands the practice of tattooing is quite general. This is a dangerous as well as painful operation, and many deaths have ensued from it, blood-poisoning frequently occurring as a result of the methods practiced. A sharp piece of human bone, secured to the end of a long spear-shaped piece of wood, is the instrument employed, and, as the same one is used indiscriminately, disease is very easily transmitted. The tattooed area extends from just above the knee to a point approximately on a horizontal line with the navel, the effect being that of a tight-fitting suit of light-blue undercloth-ing. The tattooing is only applied when the youth attains his majority, and usually takes several weeks to complete. Many women are also tattooed, but not so elaborately as the men. Sometimes there is only a line or two on the arms or across the breasts. In other cases the girl's name will be seen indelibly fixed on the right arm.

Unlike many other nations and tribes of tropical origin, the Samoans do not marry until they have reached the age of maturity. The marriage ceremony is of the simplest, the main point being that the mutual consent of the man and woman shall be witnessed by as many members of their respective families as possible. The dowry, consisting of mats, *tapa*, personal adornments, and the few household utensils employed, is supplied by the bride, and becomes the property of the groom as soon as the formal meal following the wedding ceremony is eaten. There are many marriages, however, without any ceremony whatever, a simple expression of willingness to live together filling the requirements. Divorce is not uncommon, and immemorial custom provides that all young children shall go with the mother. Polygamy was at one time practiced, but of recent years this has almost ceased. An old Samoan tradition has it that in the beginning their fathers had no houses, but were "housed by the heavens."

A native house resembles a gigantic beehive thirty or forty feet in diameter, and raised from the ground on a number of short posts placed at regular intervals. The thatching is laid with great care, and consists of the long dry leaves of the sugar cane, which here grows wild, secured in place by the picturesque branches of the cocoa palm. The thatching, if well done, is rain-tight, and lasts a number of years. In the center of the house, as shown in the illustration, there are two, and sometimes three, posts, twenty feet long, sunk into the ground three feet or more.

These pillars support the ridge-pole of the building, and are made from the trunk of the bread-fruit tree.

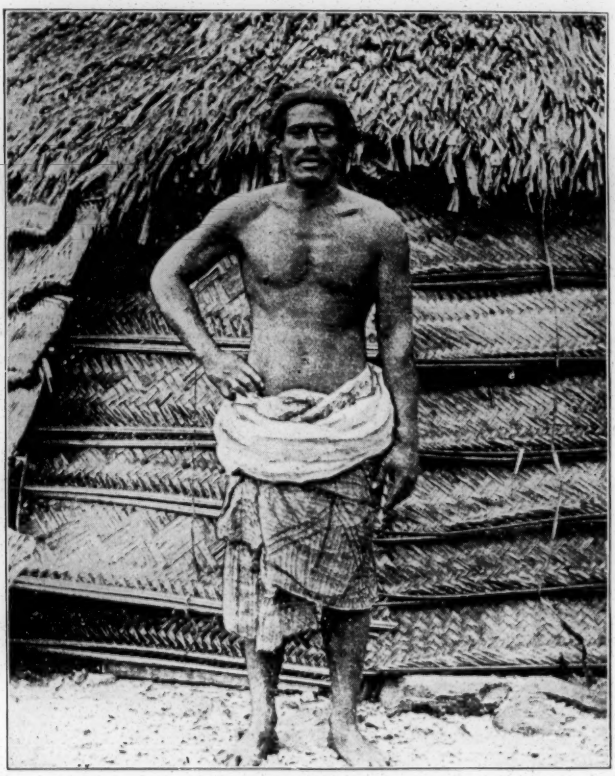
Their great circular roofs are so constructed that they can be lifted bodily from the supports and removed anywhere. No metal of any sort is used in the construction of these houses, all fastenings being made with a thin cord plaited from a cocoanut fiber. The arrangement of the houses has no regard to order, each man putting his house on his little plot of ground according to his fancy. Due regard, however, is paid to the shade

SAMOAN NATIVE HOUSE

of neighboring trees, the direction of prevailing winds, height of ground, etc. A house contains but a single room, and this apartment is by turns the common sitting-room, dining-room, and bed-room. Four or five mats make the bed, while the pillow is a piece of bamboo three or four inches in diameter, three or four feet long, and raised from the ground on short legs. The fireplace is a circular hole several feet in diameter by six or eight inches deep, and the fuel commonly employed is dried cocoanut shells, which give neither smell nor smoke. Cooking,

however, is not carried on at these fireplaces, but, save in the worst of weather, is always performed at some distance from the dwelling-house. An entire village often lends a hand in the erection of a house for a newly married couple.

The Samoans are physically well formed; they have straight hair and regular features, and are very much like Europeans in



SAMOAN CHIEF

expression. Their natural disposition is open and amiable, and the absence of a thieving propensity is a most marked characteristic. In war they have proved themselves brave and hardy, and in victory disposed to lean toward mercy. They possess great mental ability, and are capable under favorable circumstances of great improvement.

THE COMMERCIAL IMPORTANCE OF SAMOA

Commercially the Samoan islands are more important as an aid to the merchant marine of the world than as any addition which they can ever make to the world's commerce. With an area but about equal to that of Rhode Island, and much of it comparatively unproductive, little can be expected as to their producing capacity, and consequently little as to their consuming capacity. Upolu and Tutuila, however, are very fertile, and with their tropical climate could increase their products to a very considerable sum in value if properly cultivated. The natives, however, are averse to labor, and those who have attempted agricultural pursuits in the islands have been compelled to import laborers from other islands, chiefly from the New Hebrides, New Britain, New Ireland, Ellice, and the Gilbert islands, rates of wages being $1 per day for laborers, or $10 per month with food; mechanics from $3 to $5 per day; clerks, $50 per month and board, and book-keepers, $100 per month and board. There are now constantly from 1,000 to 1,500 foreign laborers in the islands, and about 300 Europeans and Americans.

The agricultural productions are chiefly copra (the dried kernel of the cocoanut), sea-island cotton, bread-fruit, sugar, and coffee. The exports of copra in 1896 amounted to $230,000, the average annual quantity being about 5,000 tons, with a present value of about $40 per ton, against $60 to $75 per ton in former years. The supply of copra has been considerably reduced by the wars between the natives, who devote their attention to raids upon the cocoanut plantations of their enemies, a man with a sharp knife being able in a few moments to destroy a tree which requires seven years to reach a producing stage by simply cutting out the crown of the tree. The copra is used for making cocoanut oil, and finds a market in the United States and Europe, about one-fifth of the crop coming to the United States, though the general market for cocoanut oil has been materially injured by the increased supply of cotton-seed oil. Experiments have been made in the production of sea-island cotton, cacao, sugar, tobacco, and coffee, and while the result has not been altogether satisfactory, it is probable that with a settled condition politically and industrious habits among the population they might

be grown satisfactorily and the exports of the islands increased from their present figure of $260,000 to $300,000 to more than double that sum.

The imports consist chiefly of cotton goods, clothing, hardware, iron manufactures, arms, ammunition, provisions, coal, mineral oil, malt and spirituous liquors. The proximity of Australasia renders it the chief purchasing market, $260,000 of the $418,000 worth of imports in the latest year's reports having come from New South Wales and New Zealand, while Germany comes next with $64,500, the United States with $60,600, Tonga, $12,000, New Britain, $8,600, other South Sea islands, $5,600, and the United Kingdom, $1,500, though doubtless a large share of the imports from Australasia is of British production. The total imports amount to from $350,000 to $400,000 annually. Both the import and export trade are in the hands of the Germans, who have large plantations and the chief trading establishments of the islands. The latest reports from the American consuls, however, indicate a gradual decline of German trade, accruing in about equal proportions to the Australian and American trade.

Transportation is by steamer lines between Sydney, Auckland, and San Francisco, their vessels calling at Apia each way every four weeks, and by the Union Steamship Company of New Zealand, which sends two steamers monthly, one from Sydney and one from Auckland. The steamers usually spend from two to five hours at Apia at each trip, dependent upon the amount of freight to be handled and the state of the weather. New Zealand is reached in five, Sydney in eight, and San Francisco in fifteen, days. Freight rates to and from the Australian colonies are much less than those to and from San Francisco, the rates on flour per ton being $7.50, against $12 from San Francisco, though rates from the islands to San Francisco are recently quoted as very low as compared with those to other purchasing markets for copra.

The currency of the islands was established by the Berlin treaty as American coinage, but the only coins current are of the mintage of Great Britain. All accounts, however, are kept in terms of United States currency, the English sovereign ($4.86) being in current business transactions accepted as equivalent to the American half eagle, the English florin (2 shillings, 48 cents) to half a dollar, a shilling to the quarter of a dollar, and the sixpence to a dime. The only case in which values are more rigidly computed is in foreign exchange, in which the rate is almost

practically uniform at $4.86 to the pound sterling or sovereign. The money in circulation is said to be about $35,000, or equivalent to about one dollar per capita, though in the absence of banks or other facilities for determining this with accuracy, these figures are necessarily merely estimates.

As already indicated, the Samoan islands are vastly more important from their strategic advantages, both commercial and political, than from the sum they can ever contribute to the trade of the world. Lying directly in the route between the Isthmus of Panama and Australia, the Philippines and the Orient, and also in the trade routes between the western coast of the United States and Australia, they are of great importance as ports of call for repairs, supplies, coaling and cable stations, etc., either for merchantmen or war vessels. The harbor at Apia is good under ordinary conditions, though the sad events of 1889, when all the German and American war vessels in that harbor were destroyed, show its unsatisfactory qualities in a severe storm. The harbor of Pago Pago, in the island of Tutuila, which is owned by the United States, is, however, pronounced by experts the best in the South Pacific.

O. P. Austin.

THE NATIONAL GEOGRAPHIC SOCIETY

The comprehensive work of the United States Government, in connection with the scientific exploration and survey of its vast territory, brings together each winter in the National Capital a larger number of specialists in those several departments of science which are more or less closely related to geography than is to be found in any other city in the world, with possibly one exception. All these workers have traveled far and wide in the prosecution of their researches, and most of them continue to devote all but the winter season of each year to further investigations in the field. Without depreciating in the slightest degree the contributions to geographic science of other explorers and investigators, it may be said that our knowledge of the geographic features, physical conditions, and natural resources of the United States and Alaska is almost wholly the outcome of the scientific work of the Government. The first explorers of the Grand Cañon of the Colorado and of the marvelous region of the Yellowstone; the men who for so many years had

the distinction of having carried the flag of their country to a more northerly point than the bravest adventurers of any other nation; those who have measured the altitude of our most famous mountains, have traced the windings of our coasts and the meanderings of our rivers, have determined the geographical distribution of our fauna and flora, have enlightened us as to the manners and customs of the aboriginal inhabitants of our country, and marked out, even in advance of their coming, the pathway of the storm and the course of the devastating flood—all of them have their homes in the National Capital and are pursuing their investigations in the service of the Government.

It was this assemblage in Washington of so many of the most active contributors to geographic science that led to the formation, on January 20, 1888, of the National Geographic Society, which, in pursuance of its constitutional object—the increase and diffusion of geographic knowledge—has performed from the first the double function of promptly presenting to the American people the principal results of geographic exploration and research and affording to the geographic workers of the National Capital opportunity for the publication, through an agency popular and yet authoritative, of information that might otherwise have lain buried in voluminous reports, more or less delayed in publication, and perhaps too technical for popular reading. The National Geographic Society began with 167 members, and so steady and uninterrupted has been the increase in its membership that, without the exertion of any special or systematic effort to excite interest in its work, it now has 1,100 active or resident, and 500 corresponding or non-resident, members. In Washington its annual course of lectures has come to be so important a feature of the intellectual life of the city that the capacity of the largest available auditorium is inadequate to its accommodation, and the erection of a building specially adapted to its requirements is in contemplation. Its official journal, THE NATIONAL GEOGRAPHIC MAGAZINE, published for the first eight years at irregular intervals and as the transactions of a scientific society rather than as a magazine of general geographic information, has, since January, 1896, been issued monthly, and its increasing circulation among teachers and the general public, independent of the Society's active and corresponding membership, has done much to encourage its editors in their efforts to keep it in the front rank of the geographic magazines of the world, and to maintain its position as the

acknowledged exponent of the geography of the western hemisphere, and particularly of the United States and its possessions. The Society has furthermore sought to promote the "increase" of geographic knowledge by the encouragement and assistance of various scientific expeditions and the "diffusion" of such knowledge by the offer of prizes for the best essays on designated subjects of geographic interest.

In not one of these several directions, however, does the Society's most substantial and conspicuous success afford more than a faint foreshadowing of the possibilities of usefulness that are open to it, and of which it stands ready to take advantage as rapidly as its financial resources will permit. It is doubtful if the study of any branch of human knowledge ever before received so sudden and powerful a stimulus as the events of the past year have given to the study of geography, and the National Geographic Society should be in a position to extend to the residents of every large city and of every important educational center in the country the same opportunities for the acquisition of geographic knowledge that are now so much appreciated by the people of Washington. There is not one of the new territorial possessions of the United States the geographic conditions and economic possibilities of which have not already been discussed, under the auspices of the Society, by distinguished men who are thoroughly familiar with them from personal observation and research, and it would be almost impossible to devise a means of more effectually promoting the Society's objects than by the delivery of these and other entertaining and instructive lectures in all the large centers of population. It is also desired to increase the size, and in corresponding measure the attractiveness and value, of the Magazine, and to this end a strong and influential addition has been made to the Editorial Committee, and an Assistant Editor, who will devote his entire time to the work, has been appointed.

While the Society will welcome any special donations that can be devoted to the promotion of geographic research, to the foundation of scholarships, or as awards for competitive essays, its main reliance must continue to be those annual dues of members for which it renders a full equivalent in its lectures and publications. Its past and present presidents, the late Hon. Gardiner G. Hubbard and Dr Alexander Graham Bell, have been generous contributors both to the ordinary and the special agencies by which it has sought to attain its objects, and to-

gether with the Editors of the Magazine, the Secretaries, and the Board of Managers in general, have given freely of their time and best energies to the furtherance of the interests for which it stands. For the first time in its history a systematic effort is about to be made to increase its membership, as the first step toward the enlargement of its work, and if each member will recognize his obligation—if not to the Society as an organization, at least to the cause with which it is identified, the closing year of the century will see the National Geographic Society enter upon a career of usefulness unexceeded in its far-reaching importance by that of any other scientific society in the world.

JOHN HYDE.

GEOGRAPHY FOR TEACHERS

There have been evident of late two simultaneous tendencies, one in scientific, the other in pedagogic, circles, whose combined result bids fair to exercise a great and far-reaching effect on the literature and life of the future. The idea was long prevalent among teachers that pupils in the common schools ought to learn only such well-established facts as could never be disputed, thus laying a firm foundation for all later knowledge; that in the college course modern theory might be profitably discussed, but that only the post-graduate student should be intrusted with original investigations. The pendulum has now swung so far the other way that some modern educators refuse to allow the multiplication table to be taken on faith, and inductive arithmetics, grammars, and physics, inductive methods even in Latin and Greek, flood the market. On the other hand, the specialist is everywhere read—through interviews in the daily papers, through articles in the magazines, through popular publications—retailing in untechnical English the fruits of his discoveries, and, where necessary, introducing and explaining those technical terms which are untranslatable, to the enrichment of the popular vocabulary.

One phase of the interrelations between the learned and the learning world is found in the text-books of the day. The writing of these books is no longer intrusted to professional bookmakers as middlemen, but such names as Fiske and McMaster in history, as Davis, Russell, and Gilbert in geography, show the desire of the public for the voice speaking with authority. A

second phase is represented in a class of popular works such as Stanford's Compendium of Geography, each volume of which, though intended for laymen, is written by an authority on the region covered; the work on the United States published by Appleton and Company five years ago, the editor a Harvard professor, and each chapter contributed by a specialist of note; the National Geographic Monographs, published three years ago by the American Book Company for distribution among teachers, each a contribution from a geologist of note on some special region of our country.

The National Geographic Society represents a third phase, including, as it does, in its membership geographers and discoverers of world-wide fame and private citizens with no claims on any science but that of interest. In order properly to index this feature of the Society and to further cement the relations between the upper and lower orders of the educational structure, the Society purposes to publish in THE NATIONAL GEOGRAPHIC MAGAZINE such information as may best aid the progressive teachers among its membership to procure both knowledge of geographic facts and skill in their presentation.

During the summer months most teachers strengthen their minds, exhausted by too much giving, by a little getting; hence the summer schools are crowded. In some of these good work is done along several geographic lines. Those teachers who remain at home need to study in this direction not the productions of the middleman, but the best authorities, for none can tell a fact either so tersely or so graphically as its discoverer.

The two lines of work most emphasized of late in geographic teaching are physiography and economic geography—the processes of the earth's preparation for man and of man's exploitation of the earth. Two, at least, of the lately published school geographies treat well, though briefly, of the first. Shaler's First Steps in Geology, followed by the reading of Le Conte's Geology, which, though not of highest scientific value, is very easy reading, will prepare for the comprehension and enjoyment of Geikie's large book. Directly following such a course may be studied the economic side of the subject as represented by King's The Soil, one of the Rural Science series, edited by L. H. Bailey, of Cornell; The Fertility of the Land, by Roberts; The First Principles of Agriculture, by Voorhees, or Vegetable Mould, by Darwin. All these involve processes related to agriculture. The Report on Iron and Steel in the Census of 1880; Economic

Mining, by C. G. Warnford Lock; The Genesis of Ore Deposits, by Poseping, or Stones for Building and Decoration, by G. P. Merrill, cover another economic field as closely related; and American Highways, by N. S. Shaler, treats of a third branch of industry based on the same study. None of these books is too difficult for such comprehension as may broaden the knowledge of any intelligent reader, though none of them is free from difficult passages or terms.

C. L. Garrison.

THE HARRIMAN ALASKA EXPEDITION IN COOPERATION WITH THE WASHINGTON ACADEMY OF SCIENCES

Through the generosity and interest in science of Mr Edward H. Harriman, of New York City, the most comprehensive and well-equipped scientific expedition that has ever left this country has just started for Alaska. The especial object of the expedition is to collect information and material relating to the fauna and flora, geology, glaciers, and other features of Alaska. As almost every branch of scientific research is represented by specialists of national reputation, from mutual coöperation and the consequent economy of time and labor, a vast fund of knowledge about the geographic features of this little-known area will be gained. The equipment throughout is as complete and generous as the plan is comprehensive, for everything that can contribute to the comfort and assistance of the members Mr Harriman has unstintedly provided. The details of the expedition are in charge of Dr C. Hart Merriam and Dr Lewis R. Morris. The plan of itinerary has been left elastic in order to take advantage of information gained on the way. The eastern members of the party left New York on May 23, expecting to be joined by the others at Chicago and Seattle, and to sail from Seattle by the steamship *George W. Elder* on or before June 1. This vessel, recently overhauled by the Union Iron Works of San Francisco, is 250 feet long, 38.5 feet beam, draws 18 feet of water when loaded, and registers 1,709 tons. She has been specially provided with new triple-expansion engines and new boilers, and equipped throughout with modern conveniences and every appliance that will contribute to scientific work on board. The first stop after leaving Seattle will probably be at the well-

known Metlakatla mission of Rev. William Duncan on Annette island; the next at Wrangell, opposite the mouth of the Stikine; but lack of time will probably make it impracticable to ascend very far up the river. Thence, after stopping at Juneau to inspect the Treadwell gold mines, which operate the largest stamp mills in the world, they will proceed to Lynn canal and visit Skagway and Dyea. A railroad is at present being built over the White pass by an enterprising American company, and if completed in time the party will cross over to Lakes Bennett and Lindeman, on the headwaters of the Yukon. Returning to Skagway, they expect to proceed to Muir glacier, named after one of the party, and to explore it and the neighboring glaciers; and thence to Yakutat bay and the Mt St Elias range, the grandest mountains in the world. The course now changes westward to Prince William sound and Copper river, then around Kenai peninsula into Cook inlet and Kamishak bay. Here some days will be passed exploring Iliamna, a smoking volcano rising 12,000 feet directly from the water's edge, and hunting for perfect specimens of the white Dall's sheep and the black Alaskan moose, the largest of the deer tribe. After crossing Shelikof strait to Kadiak, the party will probably separate, some members remaining on the island to hunt and explore, while the ship continues on to Unalaska and Iliuliuk, a region of smoking volcanoes. On Kadiak island lives the Kadiak bear, the biggest bear and largest carnivore in the world—an animal twice the size of the largest grizzly. No perfect specimen of this huge beast is at present owned by any museum in Europe or America. The ship expects to return from Unalaska to Kadiak in time to bring the entire party back to Seattle about August 1.

The character of the men who make up the party is the best index of what is likely to be accomplished. The different branches of scientific research are in charge of the following: Biology, Dr C. Hart Merriam, Chief of the Biological Survey, U. S. Department of Agriculture, assisted by Dr A. K. Fisher, Assistant Biologist, and Edwin C. Starks, and with Prof. W. E. Ritter, University of California, as associate; botany, F. V. Coville, Botanist of the U. S. Department of Agriculture, assisted by Thomas H. Kearney, Assistant Botanist, with D. W. Trelease, Director of Shaw Botanical Gardens, St Louis, Mo., assisted by De Alton Saunders, of South Dakota, as associate; geology, G. K. Gilbert, and Prof. B. K. Emerson of Amherst College, assisted by Dr C. Palache, of Harvard University. The other scientists of

the party who will direct special lines of investigation include Henry Gannett, Chief Geographer of the U. S. Geological Survey; Dr Wm. H. Dall, U. S. National Museum; Chas. A. Keeler, Director of Museum of California Academy of Sciences; Prof. B. E. Fernow, Cornell University; D. G. Elliot, Field Columbian Museum, Chicago; Prof. Wm. H. Brewer and Prof. W. R. Coe, Yale University; Robert Ridgway, Curator of Birds, National Museum, and John Muir, the authority on glaciers. Edward S. Curtis, of Seattle, the photographer of several expeditions to Alaska; Louis A. Fuertes and R. Swain Gifford, artists; W. D. Devereux, of Glenwood Springs, Colorado, mining engineer; John Burroughs, the popular writer on birds; Dr Lewis R. Morris, physician and sportsman; Dr George Bird Grinnell, editor of *Forest and Stream*, and Capt. Luther S. Kelly, the well known scout, also accompany Mr Harriman. G. H. G.

THE CAROLINE ISLANDS

In the April number of *The Scottish Geographical Magazine* Mr F. W. Christian gives a valuable and timely description of the Caroline islands. Their total population is about 50,000, a combination of the Black, Brown, and Yellow races, and is scattered over a chain of islands extending for some 1,000 miles east and west. The massive ruins existing on Yap and Ponape indicate that the islanders formerly possessed a high degree of civilization. On Yap, toward the west end of the group, there are embankments and terraces, solid roads neatly paved with regular stone blocks, ancient stone platforms and graves, and enormous council lodges of quaint design, with high gables and lofty, carved pillars. On Ponape, at the east end of the group, are still more remarkable remains of a former civilization. Here are distinctly seen the ruins of an island city, a Micronesian Venice. The ruins consist of sixty walled islets of rectangular form, built up in the waters of a shallow lagoon, while an immense, double breakwater, three miles in length, shuts out the deep waters of the outer lagoon. The walls, islets, and great breakwater are built of massive blocks of black basalt, upon which no marks of iron tools are to be found.

PROPOSED METEOROLOGICAL STATION IN ICELAND

The Meteorological Institute of Copenhagen is seeking to establish a station in Iceland whence daily weather reports can be cabled to Europe. The Grande Compagnie des Télégraphes du Nord has generously offered to lay the cable to Iceland and the necessary overland lines and to operate them free of charge, if guaranteed merely the annual expenses of operating the line and 4 per cent interest on the capital invested, with its liquidation at the end of 28 years. The cost of laying the cable and overland lines, as estimated by the Danish government, is $600,000. Allowing 4 per cent interest on the capital and 28 years for its liquidation, the lines would require about $36,000 annually for 28 years. To this must be added the cost of maintenance, estimated at $32,000, making about $68,000 to be paid each year. The company will build and maintain the line if guaranteed this amount for 20 years, after which time it offers its free use.

The Danish government has promised $19,000, or nearly one-third the total amount required; also, it has undertaken to carry out the necessary hydrographic work in connection with the laying of the cable and to establish and maintain the necessary meteorological stations in the Faroë islands and Iceland. There thus remains an annual sum of $49,000 to be guaranteed before the plan can be put into execution, and in order to make up the amount the Meteorological Institute of Copenhagen has invited the different weather bureaus in Europe and America each to contribute a share. As Iceland is in the direct path of the majority of the storms which ravage the coasts of northern Europe, the great advantage of weather forecasts from that region for the northern countries of Europe is most apparent. By an annual expenditure of $1,000,000 the United States, through its weather forecasts, saves its shipping interests at least $20,000,000 annually, and the improved meteorological information consequent upon the establishment of a station in Iceland would undoubtedly bring a like proportionate return to Europe. The U. S. Weather Bureau, while realizing the importance of such a station, believes that the expense should devolve upon the countries immediately interested, as France, Germany, Russia, etc. Hence it has decided that it can with more propriety and profit to Europe spend its money in seeking more extended telegraphic facilities toward the north and west, covering Bering sea and Alaska, especially as for many years past it has sent daily and free of cost to Prof. Mascart, at Paris, an international cablegram, giving a synopsis of the general distribution of pressure and storms over the United States and the neighboring portions of the Atlantic.

For the map of the Theater of Military Operations in Luzon, which accompanies the present number, THE NATIONAL GEOGRAPHIC MAGAZINE is indebted to Major Simpson, Chief of the Military Information Division, War Department, under whose direction it was prepared. It is the first official map of Manila and vicinity published by the U. S. Government.

THE BELGIAN ANTARCTIC EXPEDITION

The Societé Royale Belge de Geographie, of Brussels, through whose efforts the *Belgica* was equipped and dispatched in search of the South Pole, has published the preliminary report of Captain De Gerlache on the results of the expedition. After leaving Punta Arenas, December 14, 1897, the *Belgica* kept on southward, and without any incident except the loss of a few days, caused by grounding on a submerged rock near Lapataïa, reached Hughes bay January 24. Three weeks were then passed in exploring this bay in every direction, and also in investigating a strait discovered between the lands toward the east and a large peninsula, which they temporarily called Palmer archipelago.

They entered the Pacific February 12 and soon made out in the distance Alexander I Land, but as an impenetrable ice-floe prevented an approach, changed their course to the west. Two weeks later, when at 70° 20′ south by 85° west, a violent northeast wind opened up deep channels in the pack, so that, although the season was very far advanced, the occasion seemed favorable to continue on toward the south. The dangers of a winter in the Antarctic zone were evident, but, on the other hand, if caught in the ice and unable to regain the open sea, they might drift to a high latitude and perhaps winter near new lands. On March 3, seeing the absolute impossibility of continuing farther, they put the helm about, and during the few following days drifted seven or eight miles in the midst of a compact mass of ice. By March 10 the *Belgica* was completely blocked, as the cakes of ice which surrounded her had welded together and formed an impenetrable field.

Beginning with the latter half of the month of March the cold became very sharp because of the winds from the south. The temperature, however, was dependent upon the direction of the wind, for winds from the south brought clear, sharp weather, while those from the north—that is, from the ocean—almost always meant clouds and mist and a temperature about zero C., and sometimes even higher. The drift also was a direct function of the wind. The aspect of the pack changed continually; though for the most part very compact, at times great gaps and channels would open and extend for miles, but the ship, imprisoned in a wall of ice, could not gain them. By May 30 they had drifted to latitude 71° 36′ by 87° 39′, apparently the farthest point south gained by the expedition. During the winter snowstorms frequently made all work out of doors impossible; also the treacherous character of the ice-floe and the violence of the gusts of wind prevented any long excursion upon the ice. The sun set on May 17 and did not rise again until July 24. The seals and penguins, without ever being very numerous in the immediate neighborhood of the vessel, constituted the main part of the crew's fare during the last months of winter, and this fresh food not a little contributed to maintain their good health, which, except during the polar night, was excellent.

In October, 1898, an outlet opened about 600 meters distant, but immediately around the ship the floe continued unbroken. As summer was passing very quickly and a second winter seemed imminent, at the beginning of January, 1899, De Gerlache determined to dig a canal to this outlet. The measurements made by the sounding line indicated an average thickness of ice of one meter, but around the vessel it exceeded two meters. Something like 2,500 to 3,000 cubic meters of ice were excavated, and this work, in which every one took part, lasted for three weeks. By February there only remained the blocks immediately adjacent to the *Belgica*, but the pressure increased; the canal just completed contracted, and at the same time the outlet in which it ended closed up. Eleven days later, however, the pack opened sufficiently for them to advance fifteen or sixteen miles toward the north, when they were again blocked. But the dark sky in the north and the perceptible swelling of the sea were a sure sign that in this direction there was a grand expanse of water, and perhaps the open sea. During the winter the *Belgica* had only once suffered dangerous pressure; only for a few moments had she ever been in danger, but now continually battered by the great blocks of ice wedged against her by the swelling sea, the little vessel was in a very dangerous situation. Fortunately, the pack opened again March 14, and this time they were able to gain the open sea and return to Punta Arenas.

Captain De Gerlache concludes his report as follows: "Upon our escape from the pack, we were about 103° west longitude, so that the general drift was found to be 18° toward the west by about 70° 31′ average latitude. We had seen no signs of the land given in the charts at 70° south and 100° west. It is furthermore worthy of remark that our drifting, which was almost as rapid toward the south before the north wind as it had been toward the north before the south wind, as well as the soundings which we made whenever the weather permitted, carries several degrees toward the south the hypothetical contours of the austral continent in this part of the Antarctic zone. During this winter, the first that has been passed in the midst of austral ice, we were able to conduct satisfactory magnetic operations, to form an important series of meteorological polar observations, and to make a good collection of specimens of pelagic and abyssal fauna, as well as of specimens of submarine deposit."

CORRECTION

An error in the obituary sketch of Professor O. C. Marsh in the May number of the Magazine (page 181), regrettable in itself and unjust to an educational institution whence several distinguished geographers have been sent forth, requires correction. "The Phillips-Exeter Academy at Andover" should read *the Phillips Academy at Andover*. The error was unthinkingly transcribed from the usually accurate *Scientific American*, vol. lxxx, page 201.

W J M.

GEOGRAPHIC LITERATURE

Explorations in the Far North. By Frank Russell. Report of an expedition under the auspices of the University of Iowa during the years 1892, '93, and '94. Published by the University. 1898. 8°, pp. i–ix + 1–290. Illustrated with portrait, route map, and numerous plates.

The record of one of the most difficult and exciting (albeit easily the most modest of all) explorations of the Arctic interior of North America, this book is attractive reading. The author, an assistant in the University of Iowa, conceived the idea of making natural history collections in the practically unknown country toward the Arctic circle; with a little help from the University, he entered the wilderness, "lived Indian" for a couple of years, acquired the native methods of hunting the musk ox, and amassed for the University the best collection of musk ox material in the country, if not in the world. Incidentally, he made valuable observations on the natural history and ethnology of the country north of the Great Slave lake and east of Great Bear lake, winding up his work with a nearly solitary canoe voyage down Mackenzie river, and thence, through open ocean to Herschel island, where he just made connection with a whaling fleet on the eve of departure. This final juncture ended the chapter of fortunate accidents of which the book is a simple and unpretentious recital; for the survivals from starvation and storm, from wounded animals and treacherous natives, from desperate exhaustion and insidious freezing, from engulfment in muskeg pools and hidden ice crevasses, from wrecking in rapids and capsizing in surf, form a succession of surprises. There is not a boastful sentence in the book; yet between lines the author writes himself down one of the most successful explorers of frigid barrens, able to live and write and photograph and collect natural history material where earlier explorers starved and froze, and thus to demonstrate the physical as well as the intellectual superiority of the white man over Eskimo and Athapaskan even under their own special environment. Eight chapters, or half the book, are devoted chiefly to somewhat desultory itinerary; then follow four ethnologic chapters, and a sixty-page monograph on the natural history of the region, with a full index to the entire work. W J M.

The Adirondack Spruce. A Study of the Forest in Ne ha-sa-ne Park, with Tables of Volume and Yield and a Working-plan for conservative Lumbering. By Gifford Pinchot. New York: The Critic Company. 1898. 18mo, pp. i–v, 1–157, 27 pls.

This neat booklet of 165 pages and two dozen handsome plates is addressed especially to the owners and operators of spruce lands in eastern United States; so it abounds in eminently practical facts, figures, and forest pictures. At the same time, it is a sign of the times—it is a tangible evidence of growing interest in our forest resources, and a promise of increasingly intelligent effort to maintain and utilize these resources through

wisely directed action, both individual and collective. The thoroughness, comprehensiveness, and evident accuracy of the work give a gratifying earnest for the future; for, since its preparation, its author has been placed in charge of the Division of Forestry in the federal Department of Agriculture, and so has entered on a forest administration for the entire country. W J M.

MISCELLANEA

In May a Russian expedition started for Spitzbergen, where it will pass two summers and a winter in exploration and scientific research.

The steam whaler *Capella*, chartered by Mr Arthur Wellman, brother of Walter Wellman, will sail from Tromsö within a short time to bring back the members of the Wellman polar expedition.

Mr L. N. Jesundofsky, in a recent report to the Weather Bureau relative to the floods in South Carolina during February, states that the volume of water that passed seaward through the state that month was almost as great as the entire flow of the past two winters.

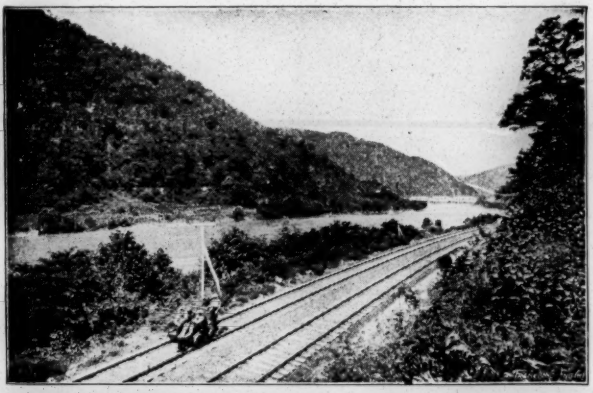
Since March 1, 1899, the Republic of Mexico has issued a daily weather map which makes immediate connection with the daily weather map of the United States and Canada. The observations are made simultaneously at 8 a. m. on the seventy-fifth meridian, or 6.23 a. m. local mean time of the City of Mexico.

The Duke of the Abruzzi, Prince Luigi Amadeo, expects to start early in June on an expedition to the North Pole. He has purchased and altered a Norwegian steam whaler and named her the *Stella Polare*. He purposes to winter in northern Franz Josef Land, and thence make an advance toward the Pole during the spring of next year.

The *Monthly Weather Review* states that the greatest thickness of ice in the harbors and rivers of the country during the past winter was during the week March 20–27 at Moorhead, Minnesota, when ice 44 inches was measured. The greatest average thickness throughout the United States occurred on February 13, when there was a thickness of 38 inches at Moorhead, Minnesota; of 8 inches at New Brunswick, New Jersey, and of 2 inches at Columbia, South Carolina.

The Biological Survey of the U. S. Department of Agriculture has sent out a special expedition to Alaska, in charge of Mr William H. Osgood, accompanied by Dr L. B. Bishop, of New Haven, to determine the geographical distribution and life zones of animals in Alaska. The party will start from Lynn canal, at Skagway, cross the White pass, and from Lake Bennett work right down the Yukon, making the complete sweep of 3,000 miles to St Michael. This is the first biological party to explore the Yukon by starting from its sources. Other expeditions of the Biological Survey during the summer include a party in charge of Mr Vernon Bailey to be engaged in biological surveying and field-work in Texas, and two parties in California, in Humboldt bay and Hoopa valley, to determine the life zones and distinctive forms of flora of that region.

C & O ROUTE



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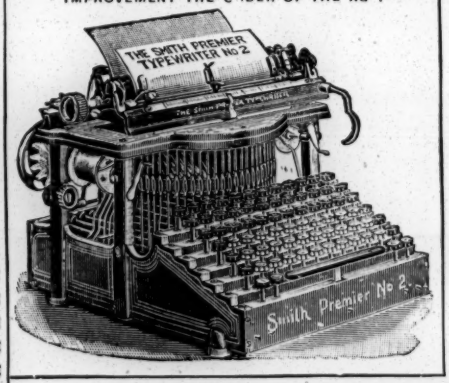

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